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J. S. Hall

"S L E E P"

Psychologically Considered

WITH REFERENCE TO

SENSATION AND MEMORY.

"For the soul never slumbereth, but is as the eye of the Eternal,
And mind, the breath of God, knoweth not ideal vacuity :
At night, after weariness and watching, the body sinketh into sleep,
But the mental eye is awake, and thou reasonest in thy dreams :
In a dream thou mayst live a lifetime, and all be forgotten in the morning."

TUPPER.

BY

BLANCHARD FOSGATE, M.D.,

Physician to the New York State Prison at Auburn.

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P R E F A C E .

IN publishing the following Essay, the author is aware that the philosophy of mind has been the theme of gifted intellects through all civilized periods, and that, varied as its phases are, they have each elicited the closest investigation. The work is therefore submitted with great deference to the public.

The reader will bear in mind that the subjects of the several chapters have not been examined with a view to their perfect history or phenomena, but have been introduced, more especially, with reference to the particular views proposed in the Introduction. In each, the leading object has been to collect facts and analyse combinations, the more clearly to elucidate, and the more perfectly to illustrate the view taken of that portion of psychology under consideration.

Auburn, N. Y., May, 1850.



CONTENTS.

	<i>Page</i>
INTRODUCTION, - - - - -	17

CHAPTER I.

NERVOUS AND MENTAL ACTION, - - - - -	25
Sensation and Perception, - - - - -	25
Phantasm, - - - - -	27
Reflex Action, - - - - -	31
Consensual or Associate Action, - - - - -	32
Mental Action, - - - - -	34
Deranged Mental Action, - - - - -	37
Rapidity of Mental Action, - - - - -	41

CHAPTER II.

SLEEP, - - - - -	50
Causes, - - - - -	58
Induction, - - - - -	58
Divisions, - - - - -	62
Stages, - - - - -	63
Lassitude, - - - - -	65
Slumber, - - - - -	65
Dreaming, - - - - -	67
Torpor, - - - - -	91

CONTENTS.

CHAPTER III.

	<i>Page</i>
MESMERISM, - - - - -	96

CHAPTER IV.

SOMNAMBULISM, - - - - - 112

CHAPTER V.

INCUBUS, - - - - - 132

CHAPTER VI.

TRANCE, - - - - - 146

CHAPTER VII.

CATALEPSY, - - - - - 162

CONCLUSION, - - - - - 172

INTRODUCTION.

THE phenomena of sleep have engaged the speculative and philosophic consideration of psychologists from the earliest periods. And although deep-searching investigation has made no approximation toward the fundamental fact of what sleep is, still a vast store of knowledge has been accumulated, from which material may be drawn to define its operations, and determine the laws by which this condition of our being is governed.

The ultimate principles—or what sleep is, and what may be its cause—being, through *Infinite wisdom*, involved in obscurity so profound, that it can only be dissipated by disclosing the mysterious fountains of life, we pass to the consideration of its existence as a component of our mental and physical being. The phenomena of memory, as presented in connexion with sensation during sleep, will also engage our especial attention.

We shall, in this Essay, endeavor to show,
That during sleep, the mental faculties are as active as
during wakefulness ;
That memory is no criterion by which to judge the
mind in sleep ; and
That the mind is dependent upon the integrity of the
organs of external sensation for a remembrance of
what transpires during this state.

To establish these propositions, it becomes necessary
to examine such of the pathological and normal phe-
nomena of our compound being as bear relation to the
subject. The mysterious as well as the more evident,
the complex and the comparatively simple states in
which our existence is involved, are made in some
degree the subjects of our inquiry.

The doctrine, that the mind is as active during our
sleep as when we are awake, has long been maintained
by some physiologists. A writer upon dreams in the
London Penny Cyclopædia says, "It is a question,
whether sleep operates on the mind as well as on the
body ; whether while it suspends the action of the body,
it also, either through the body or otherwise, suspends
the action of the mind. This is a question on which
we cannot speak positively, and on which our opinion
can be determined only by the greater probability of
the one side or the other." That the greater proba-

bility is on the side of mental activity, we hope, in the course of our remarks, most fully to establish.

Whether memory is dependent on the integrity of the organs of external relation, in the waking as well as in the sleeping state, may be questionable ; but many circumstances give plausibility to the suggestion that it may be. Do we remember anything not transmitted to the sensorium through the senses ? If not, any mental operation, independent of sensational organs for its primary stimulus, cannot be retained. When the mind is so riveted upon an idea, that these organs do not convey to the centre of perception external stimuli, there will be no recollection of things felt or seen, although they may have been even powerfully impressed. The fact that memory is a faculty of the mind not fully comprehended, renders it a fit subject of speculation, and thus it may be as Dr. Reed says, "when philosophers have piled one supposition on another, as the giants piled the mountains in order to scale the heavens, it is all to no purpose—memory remains unaccountable ; and we know as little how we remember things past, as how we are conscious of the present."

In examining the phenomena of mind, with a view to establish the proposition, 'that the mind is dependent upon the integrity of the organs of external sensation, for a remembrance of what transpires during

sleep,' it becomes necessary to present the psychological foundation upon which this conclusion is based. We should remark, however, that with the doctrine of essences, or ontology, we have little to do ; but that in the science of mind, in its more limited acceptance as regards its psycho-physiological phenomena, is to be found the sphere of our observations.

The mind, then, in the field of our labors, we regard as a unit, and as acting and being acted upon in one direction, through sensation, by external influences ; and in the other, by the innate powers of the organ of its own manifestation. The brain, notwithstanding the unity and immateriality of the mind, is so organized that particular parts are designed as fit instruments to reveal the properties of mind separately considered. The faculty of perception, the flow of feeling, and the power of thought, are elementary modes of organic activity by and through whose agency we know our position, exert our energy, and comprehend our relations. By a combination of these elements we are enabled to realize the outward world, and to grasp the results which arise from a contemplation of its phenomena. It is to this intermediate, this connecting link between the world of mind and the world of matter, that our philosophy is confined. How matter is so sublimated that the spirit principle is enabled to realize it, or how mind is so conjoined to matter as to be cog-

nisan of the operations connected with our material being, are problems to be solved, if ever solved, in the higher walks of metaphysical research.

External and internal sensations, and the powers of reflection, are the stimuli to these elementary principles or their special organs. Of these several sources of knowledge, we hold external sensation alone, as contributing to the permanency of our mental acquirements. It is at least doubtful whether the understanding or reason contributes any knowledge whatever. The facts acquired through sensation, are only combined and arranged by reason, and the results are brought into practical existence by the power of the will.

In the process of recollecting, the reflective faculty casts its stimulating influence through the mass of ideas already accumulated by observation, until it falls upon some one bearing relation to the subject in question, when, by association, that particular catenation is aroused, and in this manner the idea sought is quickly brought to view. This rationale having relation to ideas of outward existence alone, it may be asked, whether the mind has no power of recalling into mental being the memory of previous impressions from the vast field of the emotions? We answer, it has not. It may create a new emotion, but cannot recall one which has passed. When by the power of recollection

we bring to view pictures of material objects not then present to the senses, we merely bring up what was previously deposited in the mind; the idea of the impression—not the impression itself; it is a re-presentation—not a creation. This is a memory of the fact: but through the reappearing of the idea, the feelings may be stimulated in their activity, and an emotion produced identical with the one caused by the impression on which the idea was originally formed, and which may again be incorporated in the mental process. This is not the memory of an idea, but the creation of an emotion. An organ of feeling has but one definite action; and whenever excited, it is the creation of a new emotion, not the memory of one gone by. Its action can neither be induced nor varied by any direct intellectual effort, but may be indirectly stimulated through association with the perceptions, as it requires a repetition of the same stimulus to excite the emotion which originally induced it. In the re-excitement of an organ of internal sensation, we have its mode of action, which presents to the mind an actual existence—the thing itself. Memory is only a recall of ideas already formed—not a creation of them. On the contrary, when recollecting, the mind can re-assemble the ideas that originated in perception of material impressions, in proportion to the perfection of the ideas, and within the range of each

individual capacity. In this recall of ideas without reference to their origin, we recognise a distinct power of the mind, operating through the organs of perception, which we consider to be memory.

Memory, as before stated, is a mode of activity of the organs of perception stimulated by external sensation ; but recollection or voluntary memory, i.e. the power of recalling into thought the memory of past perceptions and their associate ideas, is an attribute distinct from what may be termed passive memory, or the mere remembrance of things unconnected with collateral circumstances. That volition may again and again bring up all these associations by an act of recollection, is undoubtedly true, for they have become the property of the mind, to be used as occasion may demand.

To distinguish consciousness from memory, we would say that the former does not depend upon the latter for existence, because consciousness is ever present, ever living. The consciousness of one period, and the consciousness of another, are connected by a variety of circumstances ; and it is an attribute of memory, through these circumstances, to combine these different periods of existence, making our lives one harmonious whole. When by disease the memory becomes impaired, it does not affect the consciousness. In such instances, the sources of memory, not con-

sciousness, are involved. In many cases of insanity, the individual imagines himself to be another person ; and through impairment of memory, it is probable that identity, not consciousness, is lost : identity being the result of memory and consciousness combined. We are acquainted with a lunatic irrecoverably deranged, who believes himself to be the Lord Mayor of London, being originally from that city. But notwithstanding his imaginary social elevation, he knows himself ; he answers to his name ; and in some particulars is aware of his actual condition. The chain of his identity is deranged and broken, but his consciousness is perfect, because it is a resistless, ever-present fact, like a full gushing fountain, springing unceasingly into existence.

CHAPTER I.

NERVOUS AND MENTAL ACTION.

To sustain the views proposed in our introduction it becomes necessary briefly to treat of nervous and mental action, of association, and in some measure of deranged mental manifestation. It will be remembered, however, that only a cursory examination of these subjects will be made, and without special regard to systematic arrangement, because the subjects are treated of collaterally to the objects proposed.

Sensation and Perception.

For the mind to take cognisance of a fact or circumstance external to the body, an impression must first be made upon the nerve which produces a sensation; the perception is then awakened, and consciousness is the result. Should attention be directed to the perception, it then becomes the subject of intellectual operation, ideas are formed, and memory records the fact or circumstance.

Every perception of external relation creates an idea in the mind which becomes memory, and under

proper circumstances can be recalled and compared with other perceptions present. Müller says, "we know that every idea is a permanent, immutable impression in the brain, which may at any moment present itself anew if the mind be directed to it—if the 'attention' be turned to it, and that it is merely the impossibility of the attention being occupied by many objects simultaneously that causes each to be forgotten. All these latent ideas must be regarded as impressions on the brain which cannot be effaced. Lesions of the brain may annul a part or all of these ideas."

Impressions upon the sensitive nerves are transmitted in either a peripheral or centripetal direction, according to the part impressed. If upon the root or trunk, it is perceived at its extremity; if upon the fibrils, the impression is transmitted to the nervous centre. An injury to the body of the ulnar nerve at the elbow is referred to the extremity or the nervous fibrils of the little finger, and is a familiar instance in point. It is a well known fact, that persons having lost their limbs, dream of sensations in the excised parts as vividly as though the members were *in situ*. The cause is either from an internal mental impression, or from an external mechanical irritation, as by pressure upon the nervous trunk.

Phantasm.

The reception of sensational impressions is, according to Müller, a mode of action of the sensational nerve. This corresponds with Combe's idea of certain properties of mental organs being a mode of activity with them.

When a sensational organ is excited, either by internal or external influences, the effect on the mind will be identical. The nerves of sensation stand, as it were, between the external impression and the internal idea. The retina, for instance, can be, in very many cases, excited as vividly by the inward influence as by the outward producing phantasm. To the mind, in such cases, facts only are presented, and to the organs of sense, ideas.

There appears to be a nervous *mode of action* existing between the external impression and internal perception, having relation, on one hand, to the mind, and on the other, to the sensitive nervous extremities. When this mode is excited by an internal idea with sufficient intensity, the organ, as of vision, is thrown into its mode of action; it actually sees the idea, returning it as a simple impression to the mind, and if this condition is not corrected by other mental powers, there is partial alienation. Should the action occur in sleep, a dream of the most vivid character will be

induced. The idea is, as it were, reflected upon the sensational apparatus, exciting in it actual impressions, as observed by Spinoza, and attested by Müller, that images seen in dreams are sometimes still visible, and can be observed to disappear gradually to the waking eyes. Dreams that present us with the most vivid conceptions are those in which phantasms are produced. The internal excitement having operated upon the organs of sense, to produce the same result that corresponding external stimulus would have done, the memorial power is aroused the same as though we had actually seen, or heard, or felt the impression.

Müller, in reviewing the phenomena of phantasm, says, "The facts already mentioned prove that the images seen in dreams, not the mere ideas of things conceived in dreams, are phenomena of the same kind as the phantasms. For the images which remain before the eyes when we awake are identical with the objects perceived in our dreams."

In the latter part of the eighteenth century, a Prussian bookseller named Nicolai, gave the most remarkable account of phantasm, which occurred in his own case, to be found on record. He says, "I saw, in a state of mind completely sound, and—after the first terror was over—with perfect calmness, for nearly two months, almost constantly and involuntarily, a vast number of human and other forms, and even

heard their voices, though all this was merely the consequence of a diseased state of the nerves, and an irregular circulation of the blood. When I shut my eyes these phantasms would sometimes vanish entirely, though there were instances when I beheld them with my eyes closed ; yet, when they disappeared on such occasions, they generally returned when I opened my eyes. I conversed sometimes with my physician and my wife on the phantasms which at the moment surrounded me ; they appeared more frequently walking than at rest ; nor were they constantly present. They frequently did not come for some time, but always reappeared for a longer or shorter period, either singly or in company ; the latter, however, being most frequently the case. I generally saw human forms of both sexes, but they usually seemed not to take the smallest notice of each other, moving as in a market-place, where all are eager to press through the crowd ; at times, however, they seemed to be transacting business with each other. I also saw, several times, people on horseback, dogs, and birds. All these phantasms appeared to me in their natural size, and as distinct as if alive, exhibiting different shades of carnation in their uncovered parts, as well as in different colors and fashions in their dresses, though the colors seemed somewhat paler than in real nature ; none of the figures appeared particularly terrible, comical, or dis-

gusting, most of them being of an indifferent shape, and some presenting a pleasing aspect."

Goethe, the celebrated German poet, possessed the rare faculty of producing phantasms at will. He says, "When I close my eyes and depress my head, I could cause the image of a flower to appear in the middle of the field of vision; this flower did not for a moment retain its first form, but unfolded itself, and developed from its interior new flowers, formed of colored or sometimes green leaves. These were not natural flowers, but of fantastic forms, although symmetrical as the rosettes of sculptors. I was unable to fix any one form, but the development of new flowers continued as long as I desired it, without any variation in the rapidity of the changes. The same thing occurred when I figured to myself a variegated disk. The colored figures upon it underwent constant changes, which extended progressively from the centre towards the periphery, exactly like the changes in the modern kaleidoscope."

In both these cases the objects were as actually seen by the visual apparatus as though they had been externally presented to the organ of vision. Through the central excitement the retina was thrown into its mode of action by the idea, and returned to the brain the phantasm as a simple fact.

Reflex Action.

Another mode of nervous action, but having less dependence on the brain than those just considered, is termed reflex. This action is a peculiar function of the spinal cord, and prolongs the natural movements of muscles associated for certain definite purposes, as of locomotion; and when they are once set in operation, do, by so slight a degree of sensation that it makes no impression on the sensorium commune, continue to operate in the direction of the impulse, until changed by a mandate of the will, or arrested by physical obstruction.

A good example of reflex and associate action occurs in the act of swallowing. When a morsel of food is carried so far back in the mouth as to impress the sensitive nerves of the fauces, the muscles of deglutition are immediately aroused, and not only act independently of the will, but they require its strongest effort to resist their movement if desired.

Now, such action being independent of volition, it may, when once called into play, be continued by causes that do not affect the brain; and, consequently, when a consecutive train of action is started, it may be prolonged independently of the will. This state may occur as well during sleep as in vigilance, for we know that the action of the muscles of organic life is

maintained in sleep by this process; the blood is propelled by the heart, and respiration by the associate action of the muscles of the chest.

The *medulla oblongata* is the seat of sensation and reflex action. Without the cerebrum animals will fly and walk, and yet appear as though asleep. Among the experiments of M. Flourens, we find that "an animal, in which the cerebral hemispheres have been removed, is in a state of stupor, but presents, nevertheless, manifest signs of sensibility, and not merely of the reflection of impressions. It no longer performs any voluntary movements, but, when struck, it has all the manner of an animal waking from sleep. In whatever position it be placed it resumes the equilibrium. If laid upon the back, it rises again; if pushed, it walks. If it be a bird, and we throw it up into the air, it flies; if it be a frog, it leaps when touched. The animal has, doubtless, lost its memory, it no longer reasons; but, nevertheless, it feels, and the sensations excite in it movements which are different from the phenomena of mere nervous reflection. Cuvier very aptly compares animals in this condition to a sleeping man; he also seeks an easy position—he feels."

Consensual or Associate Action.

Consensual or associate muscular action consists in the contraction of a single muscle of a particular set

being followed by a determinate movement of the others, independent of, and oftentimes contrary to the will : one eye, for instance, cannot be changed in its axis without being followed in the same direction by the other. The following experiments illustrate this mode of action. The first movement of the series is *perforce* produced, and the associate movements follow in consequence. "In a pigeon," M. Flourens "removed both cerebral hemispheres ; loss of vision immediately ensued, with general loss of power, which, however, was neither considerable nor persistent. The pigeon flew when it was thrown into the air ; walked when it was pushed. The iris had its power of motion in both eyes ; the animal was deaf, and it did not move spontaneously, but had constantly the manner of a sleeping animal, and, when irritated, it resembled in its motions an animal just awaking. In whatever position it was placed, it resumed its equilibrium ; if laid upon the back, it got upon its feet again ; water being put into its beak, it swallowed it ; and it resisted attempts to open its beak." "He likens the pigeon in this condition to an animal condemned to perpetual sleep, but without the faculty of dreaming."*

"M. Hertwig removed the upper part of the hemispheres in a pigeon ; sight and hearing were

* Müller's Physiology.

abolished, and the animal sat in one spot as if asleep. He fed it: peas, if placed merely within the beak, were not swallowed; but if laid upon the tongue, they were (owing to reflex action); the muscles were but slightly enfeebled; the bird stood firmly, and flew when thrown into the air. This state endured for a fortnight, when the hearing and sensibility in a great measure returned; this pigeon lived three months." "A hen, in which he had cut off both hemispheres nearly to the base of the brain, was found to be deprived of sight, hearing, taste, and smell; it sat constantly in one spot, and was as if dead until strongly roused, when it moved a few steps. The animal lived in this state of stupor, without its senses being restored, for three months."*

Mental Action.

Mental action does not consist of light, or sound, or touch; for none of these existences reach the brain: but of ideas originating from the stimulus of perception acting upon the mental organ. Out of ideas thus created, the mind forms its images of fancy in harmony with the leading or originating idea, modified by individual temperament. Thus the idea excited by music may associate in the mental process, the sombre

* Müller's Physiology.

light of a cathedral, the brilliant dazzle of the assembly, or the red volcanic fires of the battle-field—not merely as the strain may vary, but in harmony with the individual mental character.

We seldom enjoy the delights arising from the gratification of one sense, without ideas peculiar to others being excited in the mind. This excitement is awakened by arousing the memory, which at once combines and associates the whole to produce the mental result.

Ideas depend in a great degree for their perfection upon the integrity of the senses, because the mind can have no conception of light, for example, unless memory can recall its influence; and where the organ of vision never existed, there is nothing of this influence to be associated in the mental operations, and so it is with all the other special sensations.

The deaf do not dream of sounds, nor the blind of sights, when deafness and blindness are congenital. Where a sense has never existed there can be no idea of its phenomena in the mind, and of consequence there can be no memory regarding it. The most lucid mental perceptions we experience, and those the longest retained, arise from direct impressions upon the organs of sense. To illustrate—we might have the colors and form of the rainbow described by the most profound philosopher that ever existed, and couched in

the language of an exuberant imagination; and we might have often seen its primary colors, and be perfectly familiar with the form of the arch; yet its gorgeous glow and sublime proportions as it appears in the heavens, would be faintly portrayed to the mind; the whole conception would arise from an intellectual operation, without the foundation upon which an idea can permanently rest, and there would be very little to place in the storehouse of memory: but let the organ of vision once take an impression of the bow of promise, and the idea springs from a source that will last as long as the integrity of the mind endures.

When intellectual operations depend upon internal impressions for their stimulus, as during *sound* sleep, they are deprived of the imperishable quality imparted by external sense; but when they occur during the stages of *slumber* or *dreaming*, they are remembered just in proportion to the susceptibility of the senses providing stimulus of action.

Dr. George Moore says: "The action and reaction between mind and body are incessant, since there is not a moment, either in our waking or sleeping experience, when the nerves are not agitated by ideas." And Dr. Dendy says, that "mind is not the *product* of organization, but it works *by* and through it; and therefore for its *earthly* uses, cannot be independent of the qualities of matter." Although matter has its

influence upon mind, still the mental reaction is such as to control its special organ, the brain, and even to exert an extraordinary influence upon the whole animal economy. If the mind is immaterial, it is necessarily divested of inertness, the distinguishing quality of matter, and must therefore be altogether absent from the body during sleep, or its organ must be in *ceaseless activity*. The mind being immaterial, both it and its immediate organ are absolutely sleepless.

This idea is beautifully expressed in the following stanza. Poetry has its philosophy, and we often find the imagery of the poet imbued with the severest reason :

“ Though thy slumber may be deep,
Yet thy spirit shall not sleep ;
There are shades which will not vanish,
There are thoughts thou canst not banish.”

Deranged Mental Operation.

Deranged mental operations depend more upon an exalted condition of the propensities and sentiments, than upon external appliances. When the mind is thus excited, impressions received through the external senses seem to impair the perception so much, that it conveys to the reflective powers so little of objective reality, that they are left to regulate their own operations by the internal workings of diseased organs.

Actions flowing from such a state of mind, stamp upon the individual the character of insanity.

Now in what does such a state of mind differ from that of sound sleep? It differs in the circumstance, that external relation is by sleep withheld from the reflective faculties merely, while sleep continues, and the organs of feeling are in a healthy condition, but for a limited period permitted, as it were, to run at will, free from the restraints of rigid reason.

Insane persons appear to be only momentarily influenced in their mental manifestations by physical pain; but in sleep, it is a common cause of a connected train of thought during a long dream. Dr. Gregory, having applied a bottle of hot water to his feet, dreamed that he made the ascent of Mount *Ætna*; and a blister applied to the nape of the neck caused the patient to dream of being scalped by Indians. From the circumstance that the thoughts of the insane are excited more by internal than external sensations, we should conclude that the memory of a diseased is less active than of a healthy brain.

Between dreaming and insanity, there is a singular resemblance. The brain, when diseased, does, through its exalted internal sensations, excite in the waking mind the same irregularity of ideas which arise in dreams when the regulating power—the external senses—is withheld. In hallucination the external

is overpowered by the internal stimulus, but not obliterated.

The hallucination of Tasso, as related by Manso, Marquis of Villa, will illustrate this position: "Tasso in his delirium believed that he conversed with familiar spirits. One day, when the Marquis endeavored to drive these ideas from his mind, Tasso said to him, 'Since I cannot convince you by reason, I shall do so by experience; I shall cause the spirit, in which you refuse to believe, to appear to your own eyes.' I accepted the offer, says the Marquis, and next day, when we sat by the fire conversing, he turned his eyes towards the window, and looking with steadfast attention, appeared so completely absorbed, that when I called to him, he did not answer. 'See!' said he, at length, 'See! my familiar spirit comes to converse with me.' I looked with the greatest earnestness, but could see nothing enter the apartment. In the meantime, Tasso began to converse with this mysterious being. I saw and heard himself alone. Sometimes he questioned, and sometimes answered; and from his answers, I gathered the sense of what he had heard. The subject of his discourse was so elevated, and the expressions so sublime, that I felt myself in a kind of ecstasy. I did not venture to interrupt him, nor to trouble him with questions, and a considerable time elapsed before the spirit disappeared. I was informed

of its departure by Tasso, who, turning towards me, said, 'In future you will cease to doubt.' 'Rather,' said I, 'I shall be more sceptical, for although I have heard astonishing words, I have seen nothing.' Smiling, he replied, 'You have perhaps heard or seen more than ——.' He stopped short ; and, fearing to importune him by my questions, I dropped the conversation."

Tasso was awake ; but having a diseased mental organ, he was insane ; his external senses were intact, but the intellectual being received impressions from disordered organs of internal sensations ; and the objects presented to his mind were paramount to the words of Manso. He did not acknowledge external stimuli, because his mind was too much absorbed with the delusion. Here, also, a dissimilarity, as well as resemblance between dreaming and insanity, is clearly observable. In sound sleep, when the sensational organs are inactive, mental occurrences are not remembered. In this case, though Tasso did not acknowledge a perception of realities, and was occupied entirely by creations of his own fancy, still, the nerves of sense were perfect, and had an influence ; a remembrance of what passed in his mind was retained from one paroxysm to another. "The subject of the discourse," said Manso, "was so elevated, and the expressions so sublime, that I felt myself in a kind of ecstasy." Such elevation and sublimity are

to be obtained under circumstances of mental abstraction to a degree only found in dreaming, or in the operations of a diseased brain.

Rapidity of Mental Action.

The astonishing rapidity with which the mind acts, and the almost unlimited power of expansion with which it is endowed under certain circumstances, is of peculiar interest. The conditions best adapted to develop its resources in these particulars, are probably,

First, cerebral congestion induced by drowning or hanging.

Second, great personal danger.

Third, insanity ; and

Fourth, dreaming.

We believe that the greatest expansion of thought is connected with the last condition, and the greatest rapidity with the second. In the first, the mind appears to be calm, but highly imaginative in its operations ; and in the third to partake largely of the qualities of the fourth, in many instances.

To illustrate, we will select a few instances as nearly in point as possible.

Rapidity of mental action is often experienced on occasions of great personal danger, and almost always turns upon a review of the past life of the individual,

in which incidents the most trifling are brought distinctly before the mind, which occurred at remote periods, and each circumstance in the order of its occurrence. This has often been experienced in falls from elevated positions, as the roofs of buildings, which could have occupied but a very few seconds of time in the descent. An old sea-captain once related to me, that during a fall from the rigging of a vessel, from which he barely escaped destruction, he distinctly remembered every act of his life, even the purloining of fruit from the neighboring orchards, and the depredations upon hen-roosts, as well as the maternal admonitions inflicted for his juvenile delinquencies.

"I was once told," says the English opium-eater, "by a near relative of mine, that, having in her childhood fallen into a river, and being on the very verge of death but for the critical assistance which reached her, she saw in a *moment* her whole life in its minutest incidents arrayed before her simultaneously, as in a mirror, and she had a faculty developed as suddenly for comprehending the whole and every part."

Dr. George Moore relates the case "of a person who had been hung and cut down on a reprieve, who being asked what were his sensations, stated, that the preparations were dreadful beyond expression, but that on being dropped, he instantly found himself amid fields and rivers of blood, which gradually acquired a greenish

tinge. Imagining that if he could reach a certain spot he should be easy, he seemed to himself to struggle forcibly to attain it, and then he felt no more."

Dr. Binns says, "We are acquainted with a gentleman, who, being able to swim but little, ventured too far out and became exhausted. His alarm was great; and after making several strenuous but ill-directed efforts to regain the shore, he shouted for assistance, and then sank, as he supposed, to rise no more. The noise of the water in his ears was at first horrible, and the idea of death, and such a death! terrific in the extreme. He felt himself sinking as if for an age, and descent, it seemed, would have no end. But this frightful state passed away. His senses became steeped in light. Innumerable and beautiful visions presented themselves to his imagination. Luminous aërial shapes accompanied him through embowering groves of graceful trees, while soft music, as if breathed from their leaves, moved his spirit to voluptuous repose. Marble colonnades, light-pierced vistas, soft grass walks, picturesque groups of angelic beings, gorgeously plumaged birds, golden fish that swam in purple waters, and glistening fruit that hung from latticed arbors, were seen, admired, and passed. Then the vision changed, and he saw, as if in a wide field, the acts of his own being, from the first dawn of memory to the moment when he entered the water. They were all

grouped and ranged in the order of the succession of their happening, and he read the whole volume of existence at a glance; nay, its incidents and entities were photographed on his mind, limned in light, and the panorama of the battle of life lay before him. From this condition of beatitude, at least, these were the last sensations he could remember; he awoke to consciousness, and consequently to pain, agony, and disappointment."

Dr. Clark said, "I was once drowned." * * *

"I saw my danger, but thought the mare would swim, and I knew I could ride when we were overwhelmed. It appeared to me that I had gone to the bottom with my eyes open. At first I thought I saw the bottom clearly, and then felt neither apprehension nor pain; on the contrary, I felt as if I had been in the most delightful situation; my mind was tranquil and uncommonly happy. I felt as if in Paradise, and yet I do not recollect that I saw any person; the impression of happiness seemed not to be derived from anything around me, but from the state of my mind. And yet I had a general apprehension of pleasing objects; and I cannot recollect that anything appeared defined, nor did my eye take in any object, only I had a general impression of a green color, as of fields or gardens. But my happiness did not appear to arise from these, but appeared to consist merely in the tranquil—inde-

scribably tranquil state of mind. By-and-by I seemed to awake, as out of slumber, and felt unutterable pain and difficulty of breathing; and now I found I had been carried by a strong wave, and left in very shallow water on the shore, and the pain I felt was occasioned by the air once more inflating my lungs and producing respiration. How long I had been under water I cannot tell; it may, however, be guessed at by the circumstance; when restored to the power of reflection, I looked at the mare, and saw her walking leisurely down shore towards home, then about half a mile distant from the place where we were submerged."

In the two instances last related, the actual period consumed must have been exceedingly short; and we know that the mind, in its ordinary state, would have required a lapse, commensurate in some degree with the consideration of the objects presented. But in these cases it certainly did not. Upon the authority of Dr. Roget, "if the whole period of submersion has not exceeded five minutes, efforts of resuscitation, if properly conducted, will generally prove successful." But submersion of a much shorter time than five minutes produces all the appearances of death, and is so, at least so far as memory is concerned. It is even probable that the period of consciousness of external relation is greatly short of this, from the fact, that in

some instances there is no recollection of anything after submersion.

The rapidity of mental action occurring in dreams, where events, which in their actual development would occupy hours, days, nay, even years, are compressed and comprehended sometimes in a few minutes or even seconds, is finely illustrated in the dream of Count Lavalette. "One night," he says, "while I was asleep, the clock of the Palais de Justice struck twelve, and awoke me. I heard the gate open to relieve the sentry, but I fell asleep again immediately. In this sleep I dreamed that I was standing in the Rue St. Honoré, at the corner of the Rue de l'Echelle. A melancholy darkness spread around; all was still. Nevertheless, a low and uncertain sound soon arose. All of a sudden I perceived, at the bottom of the street, and advancing towards me, a troop of cavalry; the men and horses, however, all flayed. The men held torches in their hands, the flames of which illuminated faces without skin, and with bloody muscles. Their hollow eyes rolled in their large sockets, their mouths opened from ear to ear, and helmets of hanging flesh covered their hideous heads. The horses dragged along their own skins in the kennels, which overflowed with blood on both sides. Pale and dishevelled women appeared and disappeared alternately at the windows in dismal silence; low, inarticulate groans filled the

air, and I remained in the street alone, petrified with horror, and deprived of strength sufficient to seek my safety by flight. This horrible troop continued passing in rapid gallop, and casting frightful looks on me. Their march, I thought, continued for five hours, and they were followed by an immense number of artillery wagons, full of bleeding corpses, whose limbs still quivered. A disgusting smell of blood and bitumen almost choked me. At length, the iron gate of the prison, shutting with great force, awoke me again. I made my repeater strike ; it was no more than midnight, so that the horrible phantasmagoria had lasted no more than *ten minutes* ; that is to say, the time necessary for relieving the sentry and shutting the gate. The cold was severe and the watchword short. The next day the turnkey confirmed my calculations. I, nevertheless, do not remember one single event in my life, the duration of which I have been able more exactly to calculate."

The expansive property of mind, when acting under the double influence of a powerful imagination excited by opium, and divested by sleep of restraints from without, is finely drawn in the following extract from the "Confessions of the English Opium Eater."

"Southern Asia is, and has been for thousands of years, the part of the earth most swarming with human life—the great *officina gentium*. Man is a weed in

those regions. The vast empires, also, into which the enormous population of Asia has always been cast, give a further sublimity to the feelings associated with all Oriental names or images. In China, over and above what it has in common with the rest of Southern Asia, I am terrified by the modes of life, by the manners, and the barrier of utter abhorrence and want of sympathy placed between us by feelings deeper than I can analyse. I could sooner live with lunatics or brute animals. All this, and much more than I can say, or have time to say, the reader must enter into before he can comprehend the unimaginable horror which these dreams of Oriental imagery and mythological tortures impressed upon me. Under the conflicting feelings of tropical heat and vertical sun-lights, I brought together all creatures, birds, beasts, reptiles, all trees and plants, usages and appearances, that are found in all tropical regions, and assembled them together in China or Indoostan. From kindred feelings I soon brought Egypt and all her gods under the same law. I was stared at, hooted at, grinned at, chattered at, by monkeys, by paroquets, by cockatoos. I ran into pagodas, and was fixed for centuries at the summit or in the secret rooms; I was the idol; I was the priest; I was worshipped; I was sacrificed. I fled from the wrath of Brama through all the forests of Asia; Vishnu hated me; Seva laid in wait for me. I

came suddenly upon Isis and Osiris; I had done a deed, they said, which the ibis and the crocodile trembled at. I was buried for a thousand years in stone coffins, with mummies and sphinxes, in narrow chambers, at the heart of eternal pyramids. I was kissed with cancerous kisses by crocodiles, and laid confounded with all unutterable slimy things, amongst reeds and Nilotic mud."

Cases of insanity also furnish many instances of this peculiarity of mind. "All my imagination," says the Rev. Robert Hall, in allusion to an attack of mania, "has been overstretched. You, with the rest of my friends, tell me that I was only seven weeks in confinement, and the date of the year corresponds, so that I am bound to believe you, but they have appeared to me like *seven years*. My mind was so excited, and my imagination so lively and acute, that more ideas passed through my mind during those seven weeks, than in any seven years of my life. Whatever I had obtained from reading or reflection was present to me."

CHAPTER II.

SLEEP.

GALL says, "sleep is merely the inactivity, the perfect repose of the brain in health. During this suspension of the cerebral functions, the brain acquires new force, and on awaking, its functions take place rapidly."

Dendy says, "sleep expresses that condition which is marked by a cessation of certain mental manifestations, coincident with the degree of oppression; for it is an error to say that the *body* sleeps; it is the *brain* only, perhaps I may say the cerebrum, or the *fore* lobes; for I believe the lower part of it (that which imparts an energy to the process of breathing and blood circulation) is never in a complete sleep, but merely in a state of languor, or rather of repose, sufficient for its restoration; if it were to sleep, *death* would be the result." And again, "sleep is, indeed, the reality of another existence."

Sir Thos. Brown affirms "that we are somewhat more than ourselves in our sleep, and the slumber of the body seems to be but the waking of the soul. It is

the negation of sense, but the liberty of reason ; and our waking conceptions do not match the fancies of our sleeps."

Scaliger, an eminent Italian physician of the 15th century, describes sleep to be "a rest or binding of the outward senses, and of the common sense, for the preservation of body and soul." This definition, in some respects, is the most philosophical to be found ; for sleep does, so far as we are able to comprehend, consist in this binding of the "outward senses and of the common sense" as a leading characteristic of its phenomena.

But Richerand has more nearly defined sleep than any other philosopher. He says that "sleep is the repose of the organs of sense and voluntary motion." Had he limited this repose to the organs of sense, he would have more nearly approximated the fact of what sleep is, than by involving voluntary motion ; which does not necessarily repose during sleep, as somnambulism is a common occurrence, and change of posture is usual with most persons.

To define sleep, qualities negative as well as positive must be embraced. Sleep is that condition of existence, in which the mind is separated from external things ; and although the mind is uninfluenced by circumstances from without, still it is not inactive, but (as will afterwards appear) ceaselessly operative. The

mind has sources of stimulus in the various internal sensations, which, during sleep, influence and control it, at least so far as their powers extend, with as much vigor as during wakefulness. It is also modified, as well as diversified in its operations, by the recollection of things past, which have become the subjects of memory. In short, we would say that *perfect* sleep consists in the abeyance of the functions of the organs of external sense—at least an ordinary activity of the organs of internal sensation—a full perception by the intellectual faculties of their appropriate stimuli, and a loss of memory during its continuance.

Sleep is a part of the animal constitution, and has its necessity in our organization. Sleepiness, *ceteris paribus*, is in proportion to age. Infants pass most of their time in sleep; youth requires more than manhood, and manhood more than old age. Variations of this general law exist in idiosyncrasies and pathological conditions which interrupt the normal condition.

Nutrition and sleep are intimately connected. In the season of life when the growth of the body is most vigorous, more sleep is requisite than when this period has been displaced by one in which only the wastes of the organization are to be repaired, and this also requires more than when the recuperative energy has given place to gradual decay.

The necessity for sleep does not depend upon the

amount of food consumed, but upon the quantity required for the purposes of nutrition. Many old persons eat enormously; notwithstanding they daily become more emaciated, but are nevertheless in ordinarily good health, and pass but little time in sleep. Analogous cases are common among the insane. Their flesh wastes; they sleep but little, and yet consume, when unrestrained, almost incredible quantities of food.

Lord Stanhope, in speaking of the *causes of the restoration* produced by sleep, says that "the refreshment which it produces is very different from that which is derived from food, which may supply as large a quantity of arterial blood. A person may live some days without any food, and for a considerable time with only a small quantity, but he cannot long exist without sleep. The refreshment does not arise merely from repose of the body or of the mind, for in some persons the latter is always very active, and the former, though it may continue to be so for many hours, is not revived by sleep, but feels languor, if not lassitude."

Probably on some occasion, every one has felt the bad effects of sleeplessness on his physical powers. In some instances of the disease popularly termed "ship fever" (typhus), we have known patients to sleep soundly, and on awaking, experience no relief from the excessive weariness that oppressed them.

But what was most remarkable, they were entirely unconscious of having slept, and denied the fact, although their attendants knew that this, even for hours, had been the case. The physical being did sleep most perfectly, but the influence of the disease counteracted its ordinary beneficial effect.

Duration of sleep is influenced by many causes, and, under certain circumstances, varies as much in one as in different individuals. "Dr. Plot," as copied by Dr. Binns, "relates the case of a poor girl, eight years old, who, being beaten by a severe step-mother, and sent hungry with some refreshments to her father in the fields, could not refrain from eating part of them. Reflecting afterwards on the probable consequences of her conduct, she proceeded no further on her way, but retired to a neighboring wood, and there fell into a profound sleep, being oppressed with fear and sorrow: in this state she remained for seven days, and when discovered, showed no symptoms of life, besides the softness of her flesh and the flexibility of her joints. Dan. Ludovicus, from whom Dr. Plot borrows this relation, happening to be present, succeeded in his attempts to recover this poor creature. The same author has also preserved another instance of a sleeper, in the circle of his own acquaintance. This is the history of Mary Foster, of Amsterdam. She remained in a profound sleep for fourteen days and nights, after

an equal period of fear and anxiety, occasioned by her falling casually into a well; and the accident seems to have produced in her a disposition to torpor; for two years after, she slept two nights and a day at Uttoxeter."

Constitutionally some individuals require but very little sleep. Bonaparte, Pichegru, and Scipio may be mentioned among many others, in whom the recuperative energy of the system was sufficient to restore its equilibrium in much less time than is ordinarily required.

It would appear from the result in cases where sleep is too long withheld, that, primarily, the body receives and sustains a deleterious shock, and the mind becomes affected by the impaired physical condition. Sleep is a phenomenon of the organs of external relation, established for the resuscitation of the voluntary part of our physical constitution, leaving the organic system unchanged, except in its relation with the organs of animal life. Irritability and intensity of mental action increase with wakefulness, and unless subdued by sleep they will goad the brain into disease, terminating in madness. For

"Who can wrestle against sleep?—yet
Is that giant very gentleness."

It is reasonable to infer, that the mind suffers because

connected with a sleepless body—not because it does not sleep, for it is immaterial and cannot rest.

When we come to speak of stimuli operating on the nerves of external sense during the stages of slumber and dreaming, we shall regard the fact, that some of the nerves of sense have more intimate relation with the organs of mind than others. The optic, for instance, has its origin direct from the brain itself, and is in more perfect communion with the intellectual being than any other inlet to the mind. In truth it is the

“Window of the soul.”

Cabanis says that the senses fall asleep in a regular series of periods, each having its proper time, so that some of them are passive, while others are still active. And most physiologists agree with him that the organ of sight is the first to sleep. Whether this be so, may be questionable; but it undoubtedly is the most important one to render inactive that sleep may follow, and the only organ of sense subject to the will; consequently, it is, through volition, closed to its natural stimulus. But the closure of the lids does not preclude the influence of light absolutely, for through the lids an impression of light more or less strong, is transmitted. Persons unaccustomed to sleep with a light in their dormitory, find themselves much troubled to obtain sleep under its influence; and when obtained,

they are unusually disturbed by dreams more vivid than are common with them under other circumstances. The only reasonable method to account for this result is, that although their eyes are closed, still a sufficient amount of light is admitted through the translucent palpebra, to stimulate the mind with ideas of vision and their associate operations.

Of all the senses, the influence of sight upon the mind is the most difficult to control ; and it is the only sense upon which volition directly operates. The other senses (possibly of smell excepted) have their connexion with the brain through the medulla oblongata, and their impressions may fall on the mind in a modified degree. It is doubtful whether we attempt to close any other organ of external sense against its ordinary stimulus.

The organ of hearing, if affected at all by volition, is by the power of abstracting the mind from outward impressions ; but to prevent the vibrations of sound falling upon the tympanum is impossible by any effort of the will ; therefore, whatever power we may possess in regard to this sense, as well as smell, taste, and touch, must depend upon the faculty of concentrating the mind upon subjects unconnected with their impressions. The ear probably transmits its impressions to the mind much longer than any other external organ.

Causes.

The cause of sleep, being involved in the great mystery of our being, we again recur to the subject merely to correct what we consider an error of some physiologists on this point. Their view is, that the cause exists in venous congestion of the brain. This idea undoubtedly arose from the fact, that arterial action is decreased during sleep. Now we suppose this change in the circulation to be an effect, and not a cause; for if admitted to be a cause, what power is there in the system adequate to arrest its increase? The greater the congestion, the less power there must be in the economy to relieve the engorgement; and if, as they believe, when it reaches a certain degree of accumulation, nature, by its own struggles, relieves itself and the person awakes, is it not very remarkable that there should be no symptoms of congestion having existed? The doctrine of stagnation of the blood, either in the brain or about the heart or lungs, as either cause or effect of any normal function, we believe to be entirely hypothetical.

Induction.

Cullen says that "if the mind is attached to a single sensation, it is brought very nearly to the state of the total absence of impression."

According to Willich, "sleep is promoted by tranquillity of mind, by the absence of every stimulus to the body, by silence and darkness around us, and by a complete rest of the senses ; by gently and uniformly affecting one of the senses ; for instance, by music or reading ; and lastly, by a gentle external motion of the whole body, as by rocking or sailing."

Wordsworth says sleep may be induced by "the continuous passage of a flock of sheep, the passing of a herd of oxen, a flight of birds, and even the ocean," his "grand monotonous idea."

"If I could arrest," says Catlow, "the attention of any of my audience, so that he would think of nothing but what I was doing at the moment, I could prick him with pins without his feeling it. And if the act of attention were continued too long—longer than is compatible with the individual constitution of the mind, I could suspend the sensibilities altogether, and produce sleep—which varies according to the impressions on the senses through which I isolate or monopolize the attention."

"I have," we find in Macnish's *Philosophy of Sleep*, "often coaxed myself to sleep by internally repeating half a dozen times, any well-known rhyme. While doing so, the ideas must be strictly directed to this particular theme, and prevented from wandering ; for sometimes during the process of repetition, the mind

takes a strange turn, and performs two offices at the same time, being directed to the rhyme on one hand, and something else on the other; and it will be found that the hold it has of the former is always much weaker than of the latter. The great secret is, by a strong effort of the will, to compel it to depart from the favorite train of thought into which it has run, and address itself solely to the verbal repetition of what is substituted in its place. If this is persevered in, it will generally be found to succeed; and I would recommend all those who are prevented from sleeping in consequence of too active a flow of ideas, to try the experiment. It has been already remarked, the more the mind is brought to turn upon a single impression, the more closely it is made to approach to the state of sleep, which is the total absence of all impression."

Gardener's directions, as advocated by Dr. Binns in his "Anatomy of Sleep," are that the person "turn on his right side, place his head comfortably on the pillow, so that it exactly occupies the angle a line drawn from the head to the shoulder would form, and then slightly closing his lips, take rather a full inspiration, breathing as much as he possibly can through the nostrils. This, however, is not absolutely necessary, as some persons breathe always through their mouths during sleep, and rest as sound as those who do not. Having taken a full inspiration, the lungs are then to be left to their

own action—that is, the respiration is neither to be accelerated nor retarded too much; but a very full inspiration must be taken. The attention must now be fixed upon the action in which the patient is engaged. He must depict to himself that he sees the breath passing from his nostrils in a continuous stream, and the very instant that he brings his mind to conceive this apart from all other ideas, consciousness and memory depart; imagination slumbers; fancy becomes dormant; thought ceases; the sentient faculties lose their susceptibility; the vital or ganglionic system assumes the sovereignty; and as before remarked, he no longer wakes, but sleeps. For the instant the mind is brought to the contemplation of a single sensation, that instant the sensorium abdicates the throne, and the hypnotic faculty steps it in oblivion.”

Sleep may be induced by attentively listening to the click of a clock, and by attempts to repeat the alphabet backwards, not an easy task to those unaccustomed to it. But although so many rules for the benefit of the sleepless have been promulgated, still it will be found that each individual requires a formula adapted to his own particular temperament, and which, from necessity, he will ultimately discover for himself.

Essentially, there is no difference between these several suggestions. They all depend upon some plan whereby the mind is ultimately brought to a single idea,

monotonous in character, and there steadily held, until sleep is induced by a normal act of our constitution. The mind undoubtedly always arrives at just such a crisis, whether we will it or not, before sleep takes possession of the sensational organs, and then it is again free to rove through its diversified operations.

Divisions.

Various distinctions have been made in the nature of sleep, based upon preconceived theories of its cause; and they are treated of under the heads of natural and morbid:—but this division is dependent upon the proximate cause—not upon its natural phenomena. The exercise of the voluntary muscular texture, and the action of the mental organs, when carried to that degree of fatigue which induces sleep, is termed a *natural*, and that prostration arising from the use of narcotics terminating in sleep, is called a *morbid* condition:—but the *veiled* essence of sleep is the same, whether induced by natural and healthy means, or produced by morbid influences. In either case, the external phenomenon of sleep is involuntary abstractedness to surrounding objects, whose ordinary influences are not, for the time being, transmitted to the sensorium, but the recollection of them may, nevertheless, act with great power upon our sleeping existence.

Stages of Sleep.

To present a more perfect view of the phenomena of sleep, it will be necessary to examine its several stages in detail, and from the facts presented, to draw such conclusions as the premises will justify.

Ordinarily, sleep presents a succession of stages ; but before we proceed to examine them separately, we will remark that we may continue for a considerable period in either of them. The weary, listless sensation preceding slumber, may be prolonged by resistance, or shortened by acquiescence. Slumber will be long in anticipating a more perfect state when sleep is induced as a luxury before exhaustion has rendered it necessary. The stage of dreaming is often extended to several hours when the more perfect condition is not required or is interrupted. The stage of torpor extends from a natural, healthy period, to days, weeks, and even to months. But when sleep has been resisted as long as nature will permit, we imperceptibly glide through the preceding stages, and fall into that of forgetfulness, or torpor, even against our will. This is often the case with sailors, when the vessel is insufficiently manned, or when vigilant service has been demanded for many days in succession, requiring long watches, and permitting but short intervals for rest. Impenetrable sleep will overtake them while on duty, and a state of

torpor from which they cannot be aroused at the proper time, will occupy the hours allotted to their rest.

Captain Edward Marshall, of the packet ship *Europe*, related to me the following circumstances, which occurred on board his ship on her voyage, a few years since, from Liverpool to New York. The vessel had sustained a violent storm for fifteen consecutive days, while in St. George's Channel, when she made the port of Cork in distress. The ship had a full complement of men, but owing to the necessity of tacking every three or four hours, the crew was kept on duty almost without intermission. The sailors at length became so exhausted, that they would fall asleep while at their posts, and the difficulty of arousing them was very great. The master, in speaking of himself, said, that before they made port, whenever he laid his arm upon the gunwales to rest, he was almost certain to fall asleep, to prevent which he was obliged to take every precaution ; yet notwithstanding, he was occasionally aroused from an unconscious state by coming in contact with portions of the ship. Through exhaustion and the impossibility of remaining awake, on arriving at Cork, his effective men were reduced to five in number, and these could have sustained the incessant demands upon their vigilance but for a short time longer.

The order in which the stages of sleep arise is,

Lassitude,
Slumber,
Dreaming,
Torpor.

Lassitude.

Lassitude is that sensation of heaviness, weariness, or listlessness, which precedes and invites to a recumbent bodily posture. After the hours intended by nature for active pursuits are spent, an inward sense of weariness arises, warning us that a period of rest is necessary; and this feeling of weariness, drowsiness, or *lassitude*, is the forerunner of a more perfect condition of quiescence, in which the wearied body may recover its impaired energies.

Slumber.

Slumber is that condition, when the mind is less connected than usual by the organs of external sensation with surrounding objects, and when volition is occupied in producing a more complete separation, by withdrawing the attention from external influences. When this condition is well marked, the mind is distinctly employed in producing a still deeper degree of sleep by withdrawing itself from the perception of ex-

ternal influences. So long as the external senses connect the mind, however imperfectly, with external objects, this state may be said to exist. The feeling of sleepiness may be very considerable, but the mind is regulated in its action until some of the channels of sensation are closed. When this takes place, it is no longer perfectly controlled by the perception of external influences, and having lost that bond of union which establishes harmony of action, it is left to the unconstrained operations of the imagination. But the senses are not all subdued at once, and sight, taste, smell, hearing, and touch fail in the order here given. Morphia taken in small doses will produce slumber, and under its influence, the operation of the mind in willing the resistance of the senses to their appropriate stimuli is readily experienced, but it is continually baffled by the irregularity of mental action produced by the drug. So long as all the senses convey the impression of their stimuli, no matter how feeble, so long will this stage continue: but when the eye is involuntarily sealed to the impression of light, the mind has lost its hold on one point of the circle which bound its action in a perfect course, and here it begins to

“Weave the stuff that dreams are made of.”

The mind, now liberated, as it were, from the shackles of its earthly tenement, opens upon its career

of fancy. It annihilates space and time. The earth is too narrow for its wanderings, and the infinite expanse is alone capable of furnishing a field for its rapid flight.

“How strange is sleep! When his dark spell lies
On the drowsy lids of human eyes,
The years of a life will float along
In the compass of a page’s song;
And the mountain’s peak and the ocean’s dye
Will scarce give food to his passing eye.”

Dreaming.

The stage of dreaming is characterized by the perfect closure of one or more of the avenues of special sense. When this occurs, the harmony between the world and ourselves is broken. The mind is no longer controlled by outward influences, but is struggling under the combined effects of its own innate powers and imperfectly transmitted sensational impressions. We have lost the means whereby the perception of an impression of one sense can be tested by the co-operating scrutiny of another.

Dr. Abercrombie says, that “in dreams, the impressions which arise in the mind are believed to have a real and present existence; and this belief is not corrected, as in the waking state, by comparing the conception with the things of the external world; and that

the ideas or images in the mind follow one another, according to associations over which we have no control; we cannot, as in the waking state, vary the series, or stop it at our will."

The wonderful clearness, at times, of the mind in dreams, must have been observed by all who have given attention to this subject. This lucidity is particularly observed in imaginary conversation, public speaking, and composing, the minutiae of which the individual seldom retains on awaking; but he is astonished at the recollection of the exuberance of his ideas, as well as the ease with which he expressed them. This mental clearness depends upon the passive condition of the external senses, which modifies the impression of external things that would otherwise divert and divide the attention. In this stage, volition is ready for action, but the mental operations are not sufficiently intense to call it into play; and the mind is not controlled by the influences of outward circumstances.

We conceive that every portion of the mental organ is at all times in action; but that the degree differs as regards its various parts, and that their activity is regulated by existing circumstances. The organs which approach the passive state, exert some influence in moulding the operations of such as are actively engaged, so that although the whole are not at any one time occupied by a single subject, yet there is no part

which does not experience in a degree its peculiar mode of activity.

During sleep, the mental organ presents the same phenomena as when awake ; for in dreams certain elements only are actively excited—those having reference to the subject of the dream ; but the more passive organs are ready to change their state, as circumstances may arise to vary the character of the dream.

On being suddenly aroused, we are generally conscious of having dreamed, with little or no recollection, however, of the subject. But when we awake gradually—the necessity for longer sleep having ceased—the senses recover their functions one after another, until all are fully awake. In such case, the dream is most perfectly remembered. To this general fact, however, there are exceptions, for when suddenly aroused, either by intensity of mental excitement, or from external causes, we retain vividly the strong impression then existing, because the senses of external relation are taken by surprise, and even though awakened, the train of thought cannot be in all cases so quickly arrested. The mind is at all times subject to its proper stimuli ; but during sound sleep, that of external relation is cut off by the torpor of the special senses, and it is, therefore, less likely to be actively engaged than when all its sources of communication are open.

From this view of sleep, it may be said, we live in a

state of divided consciousness. When the external senses are in abeyance, our mental existence is clearly distinct from that of wakefulness, and *vice versâ*. But when the senses are partially impressible, then our existence is one of transition. This is the period of remembered dreams.

If it be true, as Combe remarks, that "the senses themselves do not form ideas," yet they do inform the mind of external relations or circumstances out of which ideas are produced. It is not pretended that the mind in dreams does not, or cannot recall ideas of external qualities of bodies, but the ideas which are formed relative to them are the result of internal faculties:—and so it is with the perception of an impression of any one of the senses—in truth, an impression of one may call up ideas which were originally dependent on any one or all combined.

We do not, neither can we, dream of what we possess no knowledge. But memory may, on the impression of a sense, recall to mind a fact or circumstance, and the imagination may take it up and multiply it into a thousand forms and invest them with an endless variety of fanciful creations:—for

"Lulled in the countless chambers of the brain,
Our thoughts are linked by many a hidden chain;
Awake but one, and lo! what myriads rise,
Each stamps his image as the other flies."

The sense of hearing, or impressions made upon the auditory nerve, are most intimately connected with the propensities and sentiments; and the sense of sight, or impressions transmitted by the optic nerve, are more nearly allied to the intellectual operations. The mental operations, during sleep, are longer controlled or influenced by hearing than by seeing, and dreams are consequently connected more with the animal than the intellectual constitution in their fundamental elements.

Indefiniteness—a something wanting—is a general quality of mental action in sleep, of which the mind is conscious when it attempts to recall a dream. Combe says, that “in most individuals, the mind has no power of calling up, into fresh existences, the emotions experienced by means of the propensities and sentiments, by merely willing them to be felt; and hence we hold these faculties not to possess memory. The ideas, however, formed by the knowing and reflective faculties, can be reproduced by an act of recollection, which powers are, therefore, said to have memory.” This view may account for the imperfect remembrance we have of some dreams which immediately precede the state of complete wakefulness, when, in fact, sleep has been prolonged almost by an effort of the will. For if it requires the sense of vision—which is probably the first to sleep, and the last to emerge from

it—to excite the perceptive and reflective faculties, it may solve the problem of imperfect memory of what passes in the mind during sleep. Many of the least distinct remembrances we have of our dreams, with a perfect consciousness, however, of their existence, as well as their almost purely intellectual character, are those in which the individual was engaged in composition or declamation. Another reason for this indistinctness is, that he may have been vacillating between the stages of *dreaming* and *torpor*, lying as it were on the confines of each, which would produce confusion in the memory,—remembering what transpired in the one, and forgetting what occurred in the other.

Dr. Parr says, “In dreams we seem to reason, to argue, to compose; and in all these circumstances during sleep, we are highly gratified, and think we excel. If, however, we remember our dreams, our reasonings we find to be weak, our arguments inconclusive, and our compositions trifling and absurd.” Now these views are applicable to minds of just the capacity for mental energy in the waking state, which he has described when they are asleep. The powerful intellect will reason just as correctly when asleep, upon the premises given, as when awake; but unfortunately, the data are in many instances indistinct and erroneous when the mind is debarred the influence of those

means through which facts are presented, and the judgment regulated.

“For if our *conscious waking* thoughts
Weave out so few and worthless ends,
Much more a tangled woof is wrought
When dream with dream commingling blends;
The toilsome scenes of weary days,
By night lived o’er, at morn we see
Made monstrous in a thousand ways,
Like fabled shapes on tapestry.”

But when the premises are properly grasped, we are presented with dreams in geometry, poetry, music, and in truth with mental subjects as varied as the objects of thought, and not inferior to products of the mind in wakefulness. The imperfection of memory also, in sleep, is a prolific source of error in regard to what the actual powers of the mind are in this condition.

As an example of the intellectual capacity of a mind in sleep, endowed by nature and cultivated by study, take the poem of “Kubla Khan,” which is the rehearsal verbatim of a dream of the poet Coleridge.

“In Xanadu did Kubla Khan
A stately pleasure-dome decree;
Where Alph, the sacred river, ran
Through caverns measureless to man,
Down to a sunless sea.”

"So twice five miles of fertile ground
With walls and towers were girdled round :
And here were gardens bright with sinuous rills,
Where blossom'd many an incense-bearing tree ;
And here were forests ancient as the hills,
Infolding sunny spots of greenery.
But oh that deep romantic chasm which slanted
Down the green hill athwart a cedarn cover!
A savage place! as holy and enchanted
As e'er beneath a waning moon was haunted
By woman wailing for her demon-lover!
And from this chasm, with ceaseless turmoil seething,
As if this earth in fast thick pants were breathing,
A mighty fountain momently was forced :
Amid whose swift half intermitted bursts
Huge fragments vaulted like rebounding hail,
Or chaffy grain beneath the thresher's flail :
And 'mid those dancing rocks at once and ever
It flung up momently the sacred river.
Five miles, meandering with a mazy motion,
Through wood and dale the sacred river ran,
Then reached the caverns measureless to man,
And sank in tumult to a lifeless ocean :
And 'mid this tumult Kubla heard from far
Ancestral voices prophesying war."

We have no power to set up a particular train of thought, that is to say, volition is either impotent, or subserves the bidding of the organs most highly excited. But the power of judging is probably as good as when awake, for it decides only upon the premises presented

in either case, and during sleep and in dreams the premises are usually scanty and at fault. When Dr. Johnson, in referring to a dream in which he had a contest of wit with another individual, said, "Now one may mark here the effect of sleep in weakening the power of reflection; for, had not my judgment failed me, I should have seen that the wit of this supposed antagonist, by whose superiority I felt myself depressed, was as much furnished by me as that which I thought I had been uttering in my own character." We apprehend that the *error of judgment* and *weakening of the reflective powers* arose from a lack of all the circumstances in the case being presented to his mind. Certainly he had lost identity, because in his dream he furnished argument for another person without comprehending that he was doing so, and therefore, a just conclusion could not be arrived at. But the feeling of chagrin or mortification which he experienced, was a legitimate result of his judgment founded on the premises.

Dr. Binns, to whom we are largely indebted for examples, in his chapter on dreams says, "Magnenus forgot, or rather did not know, that the same organs which are in activity during the day, continue their work during the night, while the external senses are seeking that repose which the exertions of the morning render imperative." The perpetual activity of the

mind is here clearly stated, and in our view correctly, but that it is confined to the operations of the day preceding sleep is by no means the case. But when the mind has been intensely excited upon a particular subject preceding sleep, it seems as though the same subject, modified and oftentimes richly embellished, in harmony with the mental constitution of the individual, is prolonged during sleep. A beautiful illustration is to be found in the recital of the toils and privations in the deserts of Africa by Mr. Moffat: "We continued," he says, "our slow and silent march. The tongue cleaving to the roof of the mouth from thirst, made conversation extremely difficult. At last, we reached the long wished-for water-fall; but it was too late to ascend the hill. We laid our heads on our saddles. The last sound we heard was the distant roar of the lion; but we were too much exhausted to feel anything like fear. Sleep came to our relief, and it seemed made up of scenes the most lovely. I felt as if engaged in roving among ambrosial bowers, hearing sounds of music, as if from angels' harps. I seemed to pass from stream to stream, in which I bathed, and slaked my thirst at many a crystal fount flowing from mountains enriched with living green. These pleasures continued till morning, when we awoke speechless with thirst, our eyes inflamed, and our whole frames burning like a coal."

In this case the dream may have depended in part upon internal sensations, but the intense excitement probably produced phantasms which impressed it so vividly upon the memory ; for although he had not yet reached the water, his imagination was bathing his thirsty soul in “many a crystal fountain.”

“The minds of sleeping persons,” the Elder Cyrus says, “strongly manifest their divine origin ; for when they are *free and released from corporeal influences*, they foresee much that is to be.” We would say, that freedom from external relation often confers a scope of action, ordinarily irregular and indefinite, which surpasses in imagery, variety, rapidity, and comprehension, any train of thought the same individual can originate in a state of wakefulness. The velocity with which the mind traverses space and time is almost inconceivable—in truth we are unable to grasp the rapidity with which it operates ; for when we reflect upon the subjects presented in our most vivid dreams,—circumstances essential, collateral, and accidental, are multiplied *ad infinitum*, until we are lost in the exuberance of thought which composed the vision.

The dreams of De Quincey, the “English Opium Eater,” show this wonderful power of the mental faculties when divested of the restraining influence of outward impressions. Probably every person has at some period of his life experienced this expansion of mind

which he well remembers ; although he retains only an undefined remembrance of the ideas. But when he reflects upon the subject, he is astonished with the vastness of the thoughts that floated through his mind, and he is constrained with the poet to exclaim

“Yea, in the strangeness of my vision, I
Seemed to soar on wings.”

The mental faculties may be as severely exercised when we are asleep as when awake. The intensity of action in either case depends upon the exciting cause. If the cause during sleep originate in the brain, or if it proceed from external influences, the mental operations thence take their course, sometimes consistent, as when the senses are partially intact, or inconsistent when they are in abeyance.

Phrenologists say, that the propensities and sentiments are excited by perceptions of the knowing and reflective faculties. This has reference to the waking state. But in sleep, the order is reversed. The intellectual powers receive their stimulus principally from internal sensations produced in the organs of feeling.

Dreams may be considered as simple and complex. They are simple when the mind only is in action, and complex when the physical obeys the dictates of the mental being.

When the first shades of sleep descend upon us in

consonance with our wishes, and the perception of external circumstances is vague and undefined, the mind is free to revel in all the delights of fancied happiness, or despond under the weight of imaginary affliction. This condition depends measurably upon our reflections previous to our falling into sleep; and although the mind takes on a pleasurable or painful train of thought in the commencement, it is not even probable that it will continue in it for any length of time, because one idea will lead to another, from some cause associated with circumstances which may be of an entirely different character from the one by which it was induced, and which, as the controlling influences of perfect sensational impressions are obstructed, will lead from pleasure to pain—from a sentiment of love to a feeling of revenge. In this way, the mind may be carried through all the various combinations of its ultimate elements. This mental process constitutes simple dreaming.

To illustrate the associate action of the mind in sleep, we will transcribe the dream of Professor Maas, of Halle, and his analysis of its phenomena. The professor says that "I dreamed once that the Pope visited me. He commanded me to open my desk, and carefully examined all the papers it contained. While he was thus employed, a very sparkling diamond fell out of his triple crown into my desk, of which, however,

neither of us took any notice. As soon as the Pope had withdrawn, I retired to bed ; but was soon obliged to rise, on account of a thick smoke, the cause of which I had yet to learn. Upon examination I discovered that the diamond had set fire to the papers in my desk, and burned them to ashes."

In explanation he observes, that "On the preceding evening I was visited by a friend, with whom I had a lively conversation upon Joseph the Second's suppressions of monasteries and convents. With this idea, though I did not become conscious of it in the dream, was associated the visit which the Pope publicly paid to the Emperor Joseph, at Vienna, in consequence of the measure taken against the clergy ; and with this again was combined, however faintly, the representation of the visit which had been paid me by my friend. These two events were, by the sub-reasoning faculty, compounded into one, according to the established rule, that things which agree in their parts also correspond as to the whole : hence the Pope's visit was changed into a visit made to me. The sub-reasoning faculty then, in order to account for this extraordinary visit, fixed upon that which was the most important object in my room, namely, the desk, or rather the papers it contained. That a diamond fell out of the triple crown was a collateral association, which was owing merely to the representation of the desk. Some days before,

when opening the desk, I had broken the glass of my watch, which I held in my hand, and the fragments fell among the papers : hence no further attention was paid to the diamond, being a representation of a collateral series of things. But afterwards, the representation of the sparkling stone was again excited, and became the prevailing idea ; hence it determined the succeeding association. On account of its similarity, it excited the representation of fire, with which it was confounded ; hence arose fire and smoke. But, in the event, the writings only were burned, not the desk itself ; to which, being of comparatively less value, the attention was not at all directed."

In treating the subject of dreams, one class of philosophers believe the mind to be under the influence of good and evil spirits, and that as one or the other of these invisible attendants gains ascendancy, the person will experience happy or distressing dreams. Gall, in his reduction of the mind to its ultimate elements, has shown that these spirits are to be found in the animal economy, and are the activity of the organs of the mind itself. "Almost all physiologists," he says, "agree, that, in dreaming, animal life is partially active. They are right, and yet they deny the plurality of organs ! But dreams cannot be conceived without the hypothesis of this plurality.

"When in sleep particular organs of animal life be-

come active, the sentiments and ideas which depend upon them must necessarily be awakened ; but, in this case, the activity is independent of the will.

“ When one organ only is active, the dream is simple : the object of our love is embraced, harmonious music is heard, we fight our enemies, accordingly as one organ or another is performing its functions.”

The action of the organs of veneration and benevolence, combativeness and destructiveness, in combination with other fundamental elements of the mind, will account for many of the singular associations during sleep ; and in the language of the fair Poetess will show, that

“ It is *Thought* at work amidst buried hours,
It is *Love* keeping vigil o’er perished flowers,
Oh ! we bear within us mysterious things,
Of *Memory* and *Anguish* unfathomed springs,
And *Passion*, those gulfs of the heart to fill,
With bitter waves which it ne’er may still.”

When the mental action is sufficiently intense in the dream, the faculty of speech is brought into play, and by an increased intensity, locomotion is added. This constitutes *complex* dreaming. Volition, the result of the activity of the intellectual organs, obeys those powers of the mind in operation, and therefore, when dialogue is the character of the dream, if the intellec-

tual excitement is sufficiently intense, vocal action follows ; and in like manner, when change of place is desired, volition plays the same part with the organs of locomotion—causing somnambulism.

Sleep-talking and sleep-walking occur in the stages of *dreaming* and *torpor*. When they occur in the former stage, the person retains the circumstances on awaking ; but when in the latter, there is no remembrance of them. Volition is developed in proportion, and acts in obedience to the mental organs in action ; and memory is unfolded in a like ratio to the impressibility of the sensational apparatus.

An instance combining these phenomena was familiar to the author. The subject, a merchant's clerk, was of a sanguineo-nervous temperament—irritable and timid. It was a favorite amusement with his fellow-clerks, to commence a conversation with him (as soon as he was sufficiently asleep not to be easily aroused), relative to robbers breaking into the store-house. From his timorous disposition, this subject was undoubtedly on his mind when he retired to rest, and therefore could, by skilful management, readily be made the theme of his thoughts in sleep. By this management, he could be induced to converse, leave his bed, dress, go into the street and combat any person who should oppose him in the feigned character of a robber. On awaking he could relate nearly the whole transaction.

In this case the mental action was intense, and volition was perfect in a corresponding ratio. The auditory organs, which were the principal avenues to the mind, were but little impaired, and as he could be readily aroused by concussion, the sense of touch was also in a tolerable state of integrity. In most instances of this character, the senses are apparently obliterated; the individual is not easily aroused, and memory seldom retains any of the circumstances.

Not long since, a person in the stage of torpor leaped from the second story window of a hotel in this city; alighting on the stone pavement, he considerably sprained his ankle. After running about twenty rods he came in contact with a lamp-post to which he clung, and from which he was taken in a state of sound sleep, being unconscious of his situation. On awaking he had no remembrance of what had occurred. The injury, had it been transmitted to the brain, was sufficient to change the character of his thoughts, and to arouse him from sleep. This, however, did not occur till some time afterwards. Volition was as perfect in this case as in the former, but memory was not, volition depending upon the intensity of mental action, memory upon the integrity of the special senses.

Sensational hallucinations and waking dreams do not properly belong to the subject of sleep; they are

a species of monomania, and probably arise from organic derangement. When the mind is so riveted upon one subject as to exclude all others from its notice, it has escaped from the control of the judgment, and is in a state of at least partial insanity. Revery is of this character, but of short duration. It is a species of madness. These conditions occur in a state of insomnolence, and have little in common with the phenomena presented in sleep.

The occasional premonitions communicated in dreams—"in visions of the night when deep sleep falleth upon man"—is a mystery, which as yet has not, and never may be unravelled.

Lord Stanhope relates the following singular instance of this description.—"A Lord of the Admiralty, who was on a visit to Mount Edgecombe, and who was much distressed by dreaming, dreamed that, walking on the sea-shore, he picked up a book, which appeared to be the log-book of a ship of war, of which his brother was the captain. He opened it, and read an entry of the latitude, longitude, as well as of the day and hour, to which was added, 'our captain died.' The company endeavored to comfort him, by laying a wager that the dream would be falsified by the event; and a memorandum was made in writing of what he had stated, which was afterwards confirmed in every particular."

We also introduce the following letter of the Hon. Mr. Talbot to the same effect. "In the year 1768, my father, Matthew Talbot, of Castle Talbot, county Wexford, was much surprised at the recurrence of a dream three several times during the same night, which caused him to repeat the whole circumstance to his lady, the following morning. He dreamed that he had arisen as usual, and descended to his library, the morning being hazy. He then seated himself at his secretaire to write, when, happening to look up a long avenue of trees opposite the window, he perceived a man in a blue jacket, mounted on a white horse, coming towards the house. My father arose, and opened the window: the man advancing, presented him with a roll of papers, and told him they were invoices of a vessel which had been wrecked, and had drifted in during the night on his son-in-law's, Lord Mount Morris's, estate close by, and signed 'Bell & Stephenson.' My father's attention was only called to the dream from its frequent recurrence; but when he found himself seated at his desk on the misty morning, and beheld the identical person whom he had seen in his dream, in the blue coat, riding on a grey horse, he felt surprised, and opening the window, waited the man's approach. He immediately rode up, and drawing from his pocket a packet of papers, gave them to my father, stating they were invoices belonging to an

American vessel which had been wrecked, and drifted in upon his lordship's estate ; that there was no person on board to lay claim to the wreck, but that the invoices were signed '*Stephenson and Bell.*' I assure you, my dear sir, that the above is most faithfully given, and actually occurred ; but it is not more extraordinary than other examples of the prophetic powers of the mind or soul in sleep, which I have frequently heard related.—Yours most faithfully,

“ WILLIAM TALBOT.

“ *Alton Towers, Oct. 23, 1842.*”

There are many dreams recorded and remembered with dread as having been supernatural visitations, foreboding evil, and which should have been regarded with more seriousness, and attended to with greater vigilance.

Lord Jocelyn gives in his “Six Months with the Chinese Expedition,” the following dream of Captain Anstruther. “This officer was a particular favorite with the whole force, and in his frequent walks into the country around Tinghae, when performing his military duties, had apparently made himself a great friend with the country people, for whose amusement he used to sketch likenesses, much to their astonishment. The night but one previous to his capture, the artillery camp was aroused by screams proceeding from his tent, and when some of his brother officers

traced the sounds to his quarters, he was found asleep, but upon being awaked, said, that he had been dreaming that the Chinese were carrying him off, tied arms and legs to a pole, and gagged, within sight of the camp. This is curious, as from what we were able afterwards to discover, through the means of a paid agent, it was nearly the case, and he was borne within half a mile of the very tents."

The circumstances connected with this dream divest it in a great measure of its supernatural character. The subject of it was an officer of the British army, and regarded as a deadly enemy of the people with whom he held intercourse. The dream related to himself especially, and being perfectly conversant with their character for stratagem and treachery, he stood in constant fear of them. He also knew the manner of securing their victims was precisely what occurred in his dream, and his mind in sleep was aroused to a contemplation of the subject in its worst aspect. The dream could hardly have been other than it was; but the horrors of the imaginary scene should have led him to take precautions against its realization.

We extract from Dr. Binns's "Anatomy of Sleep," which the curious in such matters will find rich in material upon these subjects, this case:—A young man named John Gray, residing at Cinderford, who told his mother, before he went to the Crump Meadow coal-

pits, at which he worked, that he dreamed the preceding night (Sunday, January 14th, 1844), that, while at work, a large stone fell upon and killed him. The mother made light of the dream. Not so the dreamer, who went reluctantly to work, and not until he had returned twice to wish her good-bye. The dream was fulfilled. An immense block of stone fell upon, and crushed him to death."

Many years ago, when our family resided on the banks of the Mohawk, long before the thunder of the steam water-paddle echoed along the shores of the Hudson, or the shrill whistle of the locomotive startled the silence of glen and mountain; when the river in the summer was crossed by ford or ferry, and in winter upon the often treacherous ice; early in the spring, before the river had broken up, my father, on the eve of departure for New York, dreamed that he was in an ice-house, striving to get out by climbing up its slippery contents. The dream was barely related, and then forgotten. The succeeding day, on horseback, he commenced his journey, and was obliged to cross the river. The ice by evaporation having lost much of its strength, he was precipitated into the stream below. Timely assistance, however, rescued him from the impending danger, but the accident and the dream were ever after coupled in his memory.

This dream was the result of mental association

during sleep, and was perfectly natural under the circumstances, but none the less a premonition of danger. Had it aroused the reflective powers when awake as strongly as it did during sleep, the accident would probably have been avoided.

It is curious to observe how thoughts of the waking hours may be prolonged and modified in sleep. As an instance we will relate what occurred in our own case, on the night succeeding our writing the remarks on mysterious and prophetic dreams.

Not long since, I was examining the Croton water-works in New York city, including some pits which were open in the streets where the great iron trunks were exposed; and on the occasion just alluded to, my mind was in part occupied with this subject. On falling asleep, I dreamed that in passing one of the pits, I jumped down upon a tube about three inches in diameter, for the purpose of inspecting the work more minutely; but when in this position, on casting my eyes below, an awful chasm presented itself, crossed in various directions by huge iron water tubes, but the bottom was invisible. However, the depth was ninety feet. In what way this information was imparted is indistinct, but such appeared the awful depth under my slippery footing. I could just fairly reach the surface above, but could lay hold of nothing, and therefore attempted to leap to the top. I failed, and in fall-

ing lodged upon the place just left. This fall will never be forgotten, so long as excessive fright commingled with horror can leave an impression on my mind. I then thought to cry for help, but dared not, lest my feet should slip and precipitate me down the dark chasm beneath. After reflecting long upon my perilous situation, I commenced feeling around the platform surrounding the top, and finally succeeded in fastening my fingers in a crevice between the planks, by which means I drew myself up. The dream ordinarily would have ended here, but my mind now turned upon the subject which had occupied my attention the preceding evening until a late hour. I thought in my dream that what had just transpired was a prophetic dream, and to what it might point my reflections were directed, as well as to what would be the best course to elude the impending danger. During these reflections I awoke excessively exhausted. In this instance, in a dream I dreamed that I was dreaming. It was a singular mental phenomenon, and of rare occurrence, but not alone on record.

Torpor.

The stage of torpor begins when the external senses are in abeyance. It has been supposed by many psychologists, that during *sound* sleep the mind is dormant.

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This view is based upon the fact, that as there is no memory of thought during this period, it must of consequence be in a state of quiescence.

Torpor, or sound sleep, is that condition of the system which most strongly resists the return of the senses to their normal functions on the application of external stimuli ; and when aroused, the memory retaining no knowledge of the interval elapsed—regarding it as a blank in our conscious existence. It is immaterial by what means this condition is induced ; whether it be a normal sequence of our constitution, the administration of narcotics, or by influences of the character of which we are ignorant. It exhibits only the phenomena of organic life ; all consciousness regarding the ordinary influences of external objects is lost, and all memory of having existed during its continuance obliterated.

From the recorded cases of protracted sleep, let us extract one from Macnish, illustrating the peculiar characteristics of this stage.

“The case of Mary Lyall, related in the 8th volume of the ‘Transactions of the Royal Society of Edinburgh,’ is one of the most remarkable instances of excessive somnolency on record. This woman fell asleep on the morning of the 27th of June, and continued in that state till the evening of the 30th of the same month, when she awoke, and remained in her usual

way till the 1st of July, when she again fell asleep, and continued so till the 8th of August. She was bled, blistered, immersed in the hot and cold bath, and stimulated in almost every possible way, without having any consciousness of what was going on. For the first seven days she continued motionless, and exhibited no inclination to eat. At the end of this time she began to move her left hand ; and, by pointing to her mouth, signified a wish for food. She took readily what was given her ; still she discovered no symptoms of hearing, and made no other kind of bodily movement than of her left hand. Her right hand and arm, particularly, appeared completely dead, and bereft of feeling ; and even when pricked with a pin, so as to draw blood, never shrank in the least degree. At the same time she instantly drew back her left arm whenever it was touched by the point of a pin. She continued to take food whenever it was offered to her. For the first two weeks, her pulse generally stood at 50, during the third and fourth week, about 60, and on the day before her recovery, at 70 or 72. Her breathing was soft and almost imperceptible, but during the night-time she occasionally drew it more strongly, like a person who has first fallen asleep. She evinced no symptoms of hearing, till about four days before her recovery. On being interrogated, after this event, upon her extraordinary state, she mentioned that she

had no knowledge of anything that had happened ; that she had never been conscious of either having needed or received food, or of having been blistered ; and expressed much surprise on finding her head shaved. She had merely the idea of having passed a long night in sleep."

Whether we are to regard the retraction of the arm when pricked as the result of volition, or whether the prick merely excited a reflex action, may be questionable. She certainly exhibited sensation, but without perception there could be no volition. Food, when put into her mouth, was swallowed readily ; but she could not recollect it. Deglutition may be accomplished independently of the will, owing to reflex action, as was shown in the experiments of Hertwig and Florens, who found that animals would swallow substances placed upon the tongue, after the superior portion of the brain had been removed. All the sensibility she evinced, until about the fourth day before her recovery, was probably of this character. At this period she had perception through the auditory apparatus, and consequently, when she awoke, "she had merely the idea of having passed a long night in sleep ;" she had an indistinct recollection of having existed for that period.

There are many extraordinary instances of protracted sleep recorded, but they all present the peculiar

characteristics of the stage of torpor, and give additional evidence of the views here set forth.

Another singular state of existence, which still further illustrates the mental as well as physical condition during sound sleep, may be observed in the artificial induction of torpor through the influence of animal magnetism, which we shall consider in the next chapter.

CHAPTER III.

MESMERISM.

ANIMAL MAGNETISM, as connected with the phenomena of sleep, is not only interesting as a matter of metaphysical speculation, but of great importance in the illustration of our subject. In truth, sleep is always the same in principle, though differing in degree, let the inducing cause be what it may ; and that condition which the disciples of Mesmer term Magnetic sleep, is but its most profound state, or the stage of torpor.

The phenomena presented by the power of the mesmerizer in opening a passage to the mind in this isolated condition, displaying its integrity in a light so clear that we perceive its condition and power of action to be as perfect during sleep, while the external senses are sealed to their natural stimuli, as when it receives its impressions through their media,—are truly wonderful. It acknowledges an unusual channel of communication when its ordinary ones are closed, and as the sequel will show, is ever perfect, and ready to reply to impressions when correctly made.

The manipulations of the mesmerizer conduct the mind and body through all the stages of sleep—from lassitude to slumber, and from slumber to a death-like trance, when, answering to no ordinary stimuli, the senses are apparently obliterated, the functions of intellectual existence sealed up, while only those of organic life remain, and the subject to all appearance but one remove from death itself. This is emphatically a state of sound sleep. Are the mental faculties during this inexplicable condition dormant? Speak to the subject, no reply is elicited: apply the knife to the dermoid texture, no sensation is acknowledged: present to the eye an illuminated body, no influence is excited. The natural avenues to the mind are closed, and it is unapproachable through ordinary means.

The power to set aside this mysterious condition lies with the agency that produced it, and through its influence, to reveal a mental state during sleep, which, without its assistance, must have remained among the things unknown.

The magnetizer, in operating upon the mental state of his subject, fixes his own mind intensely on some object with which the magnetized is unacquainted, and makes inquiries relative to it. He receives for answer a true description. This is probably a reflection of his own mind. But he does not always receive a correct reply. This may be owing to an

imperfection in the mind of the magnetized, who may not be able to comprehend the subject; and because there is probably no power of creation, but only of eliciting what already exists. The questions are not invariably replied to, and reasons are sometimes assigned for withholding replies. This is not a reflection of the mind of the manipulist, but a distinct act of volition, involving the reflective faculties. It is antagonistic to, and not in harmony with the will of the mesmerizer. The manipulist possesses the power of directing the mind of the magnetized to a particular subject, but without the power of controlling its operations. It is apparently dependent as to the selection of a subject for consideration; but afterwards acts upon it independently. In such case the individual presents his own mental characteristics. Should discretion be the prominent feature of his mind, his answers will be in harmony with sound sense; but if he is gifted with strong powers of imagination, his replies will partake largely of his own fanciful creations. The magnetizer appears to hold the same controlling influences through his mysterious communications, that surrounding objects do through the special senses,—the regulating power of the mind; but the result of the mental operations as manifested through the will is independent.

One of Dr. Elliotson's cases illustrates this mental

independence of the magnetic state very explicitly. In the Doctor's solicitations for a song, his subject exhibited great impatience at his importunity, but upon his earnest request "she at length complied, and sang a ballad in a rather sweet voice, breaking off, however, in the middle with an impatient expression, "How tiresome you are! There, I forget it." "After some minutes, she resumed, and finished the song."

Dr. George Moore, in his "Body and Mind," relates the case of a boy with a headless supplemental trunk growing from the abdomen, which on being touched, the sensation was acknowledged by, or in other words, referred to the corresponding part of the perfect body. In this case it appears that the percipient principle of one mind acted for the sensations of another body. There are numerous cases of mesmeric record, where a like mental phenomenon is exemplified in separate bodies. For instance, when the sense of taste is intensely excited by highly flavored substances placed on the tongue of the mesmerizer, the same impression is perceived by the mesmerized, and so of the impressions of all the other senses. The books on mesmerism abound in examples of this kind.

Not long since we attended an exhibition of animal magnetism, and were appointed one of a committee to prevent or discover collusion between the parties, and we must frankly acknowledge that nothing of the kind

could be detected ; in fact, we were perfectly convinced that there was no attempt made at deception. At this exhibition there were two subjects—a young man about eighteen, and a young woman about twenty years of age. These subjects were thrown into the mesmeric sleep at the same time, and retained under its influence for about three hours. In these cases, the mental faculties, so far as the subject of thought was concerned, were under the control of the mesmerizer, but the precise mode of mental manifestation was independent of him. In their answers to interrogatories, either written or verbal, they both replied at the same time in phraseology differing entirely, but expressing the same ideas. The locomotive power of one was subject to his will ; and in her case, the voluntary muscular organs could be relieved of their rigidity by degrees. The arms would be perfectly rigid after the mind was restored to external relation, and the hands would remain clenched while the flexor muscles of the arm and fore-arm were perfectly relaxed ; a condition which our present knowledge of physiology does not account for, but which could be tested by the senses of touch and sight, beyond the possibility of deception. Was there not a faculty here developed, resembling that located in the claws of birds which sleep roosting, and which some suppose to be independent of the will, when the animal has taken its pos i-

tion for the night? These cases also exhibited the phreno-magnetic phenomena in an extraordinary degree. The application of the finger to an organ of one subject would instantly be manifested by the acts of the other, sometimes in vocal expressions, and at other times in change of posture, understood as the phrenological language of attitude.

Since witnessing this exhibition, we have attended many others of pretty much the same character. We have more lately examined a clairvoyant case. The subject was a young man about twenty-five years old, of a retiring disposition, unassuming manners, and a temperament bordering on the phlegmatic. He was said by the mesmerizer to be a good example of the clairvoyant faculty. He was easily brought under the magnetic influence, and entered readily into conversation with the mesmerizer, who requested him to go to California and describe what he could there see. His descriptions of the country, climate, and mineral treasures, were merely a rehearsal of the current newspaper articles of the day touching this all-absorbing subject. As these precious scenes were passing before his mind, his imagination began to give color and extension to his ideas, and the golden regions were rapidly stretched along the Rocky mountains, reaching far up the Oregon. Mountains glittering with gold, and valleys to their river bottoms, were shining

with their precious stores. From this extensive field of observation, he was brought back by his mesmerizer to the contemplation of objects immediately before him, with the request to describe what he then saw. The scene had evidently changed. From barely rehearsing, in part, his own golden visions, probably the great sum of his daily thoughts, he was constrained to deal with things within the compass of his own observation, and it cost great effort to convince the audience that he possessed, without the use of ordinary sense, a tolerable knowledge of surrounding objects. But to give perfect satisfaction that he was in a completely abnormal state, a dentist extracted a large molar tooth without disturbing in the least the calmness of the patient. On awaking, he remembered nothing of these circumstances.

The question now arises, did the subject see when he described surrounding objects, or was it a reflection of the mind of the mesmeriser? See, he certainly could not, because his eyes were closed, and the pupils were permanently dilated; but he assuredly did by some means perceive the objects, otherwise he could not have described them. Whether in this particular it was a reflection of the mind of the mesmerizer, or whether it was identical with an ordinary occurrence of somnambulic sleep, is difficult to determine. His

descriptions of California were undoubtedly drawn from his own mind.

During this exhibition, his conductor again required him to change the scene of his observations, and it was thence transferred to the spirit land. The first object he there saw, was a near relative of the magnetizer who had been dead some years, but whose memory, from peculiar circumstances, was strongly impressed upon his mind. Of this person he gave an apt description. He also saw his own mother, on having his attention so directed, who also had been dead a long time; of her too he gave a good description. In the former instance, he presented a counterpart of the mind of the manipulist, but in the latter he must have drawn upon his own memory, because his mother was unknown to the lecturer. The description of the deceased relative of the mesmerizer in the one case, most fully confirms the opinion that he simply reflected the mental operations of the mesmerizer; and the description of his own mother, an entire stranger to the lecturer, proves that he drew upon his own memory alone; while his imagination arranged the whole so as to appear a present reality. Throughout the exhibition, the power of the mesmerizer in directing the attention of this patient to particular subjects, but without the power of controlling him relative to them, was entirely conclusive.

Now to say, that, because the statements of the clairvoyant are correct in regard to circumstances with which we are acquainted, we are bound to believe them equally so in regard to such as are beyond the reach of human knowledge, is unphilosophical; because we should attempt to apply analogical reasoning to that branch of philosophy which is itself the source of all reason. Analogy is merely the means whereby the reason assists itself in determining properties subordinate to its own powers.

From among the many experiments showing the influence of animal magnetism on the sensitive apparatus, we will copy a surgical case which occurred in hospital practice. "James Wombell, 42, a laboring man, had suffered for a period of about five years with a painful affection of the left knee joint. He was admitted into the hospital at Wellow, in Nottinghamshire, and it was decided that amputation should take place above the knee joint, and it was accordingly done while the patient was under the influence of mesmeric sleep! On the 1st of October this wonderful operation was thus performed, as given in the words of the mesmerizer, one Mr. W. Topham, a lawyer of the Middle Temple, London: I again mesmerized him in four minutes. In a quarter of an hour I told Mr. W. Squire Wood (the operator), that he might commence. I then brought two fingers of each hand gently in con-

tact with Wombell's closed eyelids, and there kept them still further to deepen the sleep. Mr. Wood, after one earnest look at the man, slowly plunged his knife into the centre of the outer side of the thigh, directly to the bone; then made a clear incision round the bone to the opposite point, on the outer side of the thigh. The stillness at this moment was something awful. The calm respiration of the sleeping man alone was heard, for all others seemed suspended. In making the second incision the position of the leg was found to be more inconvenient than it had appeared, and the operator could not proceed with his former facility.

“Soon after the second incision, a moaning was heard from the patient, which continued at intervals until the conclusion. It gave me the idea of a troubled dream, for his sleep continued as sound as ever. The placid look of his countenance was never changed for an instant: his whole frame rested, uncontrolled, in perfect stillness and repose: not a muscle or nerve was seen to twitch. To the end of the operation, including the sawing of the bone, securing the arteries, and applying the bandages—occupying a period of more than twenty minutes—he lay like a statue. With strong sal volatile and water, he gradually and calmly awoke, and when asked to describe what he had felt, thus replied: ‘I never knew anything more

(after his being mesmerized) and never felt any pain at all; I once felt as if *I heard* a kind of crouching.' He was asked if that was painful; he replied; 'No pain at all. I never had any; and knew nothing, till I was awakened by that strong stuff.' The 'crouching' was the sawing of his own thigh bone. The first dressing was performed in mesmeric sleep, with similar success, and absence of all pain."

In the London Penny Cyclopædia we find the following case—Vide article Somnambulism.

"Madame Plantin, aged 64, living at No. 151 Rue Saint Dennis, consulted M. Cloquet, April 8th, 1829, respecting an open cancer which had existed for several years in her breast, and which was complicated with a considerable enlargement of the right axillary ganglions. M. Chapelain, her physician, who had mesmerized her for some months, with the view of dissipating the disease, could effect only a profound sleep, in which sensation appeared suspended, but intellect remained perfect. He suggested to M. Cloquet to operate upon her in the mesmeric sleep-waking. M. Cloquet, having judged the operation indispensable, consented, and it was fixed for the following Sunday, April 1st. The two previous days, she was mesmerized several times by Dr. Chapelain, who prevailed on her, when in the state of sleep-waking, to bear the operation without fear, and brought her even to converse about it calmly; although,

when she was awake, she could not listen to the proposal for horror.

“On the day fixed, M. Cloquet arrived at half-past ten in the morning, and found the lady dressed, in an arm-chair, in the attitude of a person calmly asleep. She had returned about an hour from mass, which she had habitually attended at that time of the day. Dr. Chapelain had thrown her into the mesmeric sleep on her return. She spoke with perfect calmness of the operation which she was about to undergo. All being ready she undressed herself, and sat upon a common chair.

“Dr. Chapelain supported her right arm. The left was allowed to hang at her side. M. Pailloux, internal student of the Hôpital Saint Louis, had the charge of presenting the instruments and applying the ligatures. The first incision was begun at the arm-pit, and carried above the breast as far as the inner side of the nipple. The second was begun at the same point, and carried under the breast till it met the first. M. Cloquet dissected out the enlarged ganglions with care, on account of their proximity to the axillary arteries, and removed the breast. The operation lasted ten or twelve minutes.

“During all this time, the patient conversed calmly with the operator, and gave not the least sign of sensibility; no movement occurred in the limbs or features;

no change in the respiration or voice, no emotion even in the pulse was discernible; this patient remained uninterrupted in the same state of automatic indifference and passiveness (*état d'abandon et d'impassibilité automiques*), in which she was some minutes before the operation. There was no necessity to restrain her, we had only to support her. A ligature was applied to the lateral thoracic artery, which was opened in removing the ganglions. The wound was closed with sticking-plaster and dressed, and the patient was put to bed, still in the same state of sleep-waking; and was left in this state for eight and forty hours. An hour after the operation a slight hæmorrhage occurred, which proved of no importance.

"The first dressing was removed on Tuesday the 14th; the wound was washed and dressed afresh; the patient showed no sign of pain; the pulse was undisturbed. After this dressing, Dr. Chapelain awoke the patient, whose sleep-waking had lasted from one hour before the operation, i. e. two days. The lady seemed to have no idea, no conception of what had passed; but on learning that she had been operated upon, and seeing her children around her, she experienced a very strong emotion, to which the mesmerizer put an end by immediately sending her to sleep again."

Double consciousness—another completely abnormal

state, to which in the course of our concluding remarks we shall again recur,—is often induced by animal magnetism; and when so induced, is called *independent clairvoyance*. The individual, in this condition, is as perfectly conscious, has as clear an understanding of surrounding objects, and is as self-possessed as under ordinary circumstances; but on coming out of it, he retains no remembrance of what has taken place. When the same state of mind is again induced, what had transpired in a former state of the same kind, is again present to him.

A little girl about twelve years old, when in this state, in her lively intercourse with her relatives and companions, on attempting to run quickly across the room, hit her head against a stove pipe, which gave her some pain. On being restored she could recollect nothing about it; but on a future occasion, being in the same state, she was requested to see how fast she could run, to which she replied that she had tried that once, had hit her head against the stove pipe, and should not do it again.

The phenomena of double consciousness can be maintained for an indefinite period. We find in Prof. W. H. Rogger's "Facts in Mesmerism," an instance extended to three weeks, and in other books on Animal Magnetism, cases of a much longer period are recorded.

In many instances, the individuals, on being restored to the natural state from any of the conditions induced by mesmerism, have an indistinct remembrance of what has transpired. Upon close investigation of all the phenomena, it appears that memory depended upon an imperfect state of sleep at the time, the influence having in part subsided. In other cases, the magnetizer, by so willing, fastens the transactions upon their memory. Here also we apprehend that his influence induced at the time a more perfect state of sensation, and by this means a remembrance of occurrences is retained.

Great diversity of mental character is exhibited by the influence of animal magnetism. In one subject it exalts the natural quality of mind almost beyond the power of conception; in another, it so perfectly becalms the thoughts, that the individual borders on fatuity; while in others, the ordinary temperament is quite unaffected; and in some, the thoughts and feelings of the mesmerizer are reflected as in a mirror—the mesmerized having apparently lost his own identity.

Physically considered, in some constitutions it produces merely a state of sound sleep; while in others it superadds convulsions. In some cases it is the exciting cause of catalepsy; and in every instance its influence is exerted on some portion of the nervous system. We have witnessed in one case, catalepsy of

muscle ; in several, paralysis of muscle ; and in very many instances, muscular rigidity ; but in no case did the same individual ever exhibit more than one of these conditions. This variety of symptom is probably the result of constitutional idiosyncrasy.

Let the essential principle be what it may, animal magnetism holds a controlling power over both mind and body. The few examples of its influence we have cited in this chapter, are given—not to decipher what this mysterious agent is—but to show how intimately memory and sensation are associated ; and how absolutely dependent the memorial faculty is upon the integrity of the organs of special sense for its development.

CHAPTER IV.

SOMNAMBULISM.

SOMNAMBULIC sleep is one of the most extraordinary and unaccountable anomalies of our nature. The almost endless variety of mental and physical combinations it presents; the adaptation and precision of action to effect a definite purpose; and the apparent power to overcome obstacles to its accomplishment, not only strike the mind with amazement, but involve it in an inexplicable labyrinth of doubt and uncertainty.

The vast number of cases recorded in this department of our subject, should afford abundant material from which to determine the laws regulating its operations. But upon critical examination, few of them offer more than undefined and imperfect sketches of its phenomena; and for a philosophical inquiry, furnish but a slight foundation on which to rest a theory.

In considering somnambulism, the questions arise, is the subject cognisant of surrounding objects?—and if so, by what means?—so that the relation of mind and

body may be defined, as well as the causes which propel their operations.

The mind, in somnambulic, is circumstanced the same as in ordinary sleep, so far at least as regards its causes of excitement; but its activity is infinitely more intense. Sleep walking and sleep talking occur in the stages of either dreaming or torpor, and are governed by their laws. In all perfect cases of somnambulism, the mind is as ignorant of the external relations of the body as it is during sound sleep, so far as knowledge is derived through the organs of special sense; and therefore we conclude that it can have no memory of either the mental or physical acts during the paroxysm. But it will be recollected, that, when speaking of dreams being remembered in part, and in part forgotten, the physical condition was in a state of transition,—vacillating between dreaming and torpor. And so it is with regard to somnambulism; a part of the acts are remembered, sometimes as a dream; and a part forgotten, according to the stage of sleep in which it occurred.

“Hortius mentions a young nobleman, who was observed by his brother to rise in his sleep, put on his cloak, open the casement, mount by a pulley to the roof of the citadel of Brenstein, where he was, tear a magpie’s nest to pieces, wrap the young ones up in his cloak, return to his room, place the cloak with the

birds in it near him, and go to bed. In the morning he told the adventure as a dream, and was astonished when shown the magpies in his cloak, and, when led to the roof, to behold the remains of the nest.”* In this case the object in view was paramount, the senses in a measure impressible, the perception of their impressions clear, and consequently the circumstances were remembered.

By what means does the mind discover that the physical acts have in some cases been erroneous, as in the instance of the individual shortly to be cited, who corrected errors he committed in writing musical airs? The inference is, that the same state here existed that we find in mesmeric sleep, both of which, with the information we at present possess, are inexplicable; but that neither the errors nor corrections were made through the assistance of vision, the experiments conclusively determine.

To illustrate, let us take some of the cases recorded in the “Cyclopædia of Practical Medicine—London.” “This somnambulist was a young priest in a Catholic seminary; the witness and reporter of the facts, the Archbishop of Bordeaux, who used to go into his chamber after the priest was gone to sleep, and observe his proceedings. He sometimes arose from his bed,

* Binns' Anatomy of Sleep.

took paper, and wrote sermons. After finishing a page, he read (if the act was properly reading) the whole aloud; and, if necessary, erased words, and wrote his corrections over the line with great accuracy. I have seen the beginning of one of his sermons which he had written when asleep; it was well composed, but one correction surprised me: having written at first the words 'ce divin enfant,' he had afterwards effaced the word *divin*, and written over it *adorable*. Then perceiving that the *ce* could not stand before the last word, he had dexterously inserted a *t*, so as to make the word *cet*.

"The witness, in order to ascertain whether he made use of his eyes, put a card under his chin, so as to intercept the sight of the paper which was on the table; but he continued to write without perceiving it. Wishing to know by what means he judged of the presence of objects which were under his eyes, the witness took from him the paper on which he was writing, and substituted others repeatedly. He always perceived this by the difference of size, for when a paper of exactly the same shape was given to him, he took it for his own, and wrote his corrections on places corresponding to those on the paper which had been taken away from him. The most astonishing thing is, that he could write music with great exactness, tracing on it at equal distances the five lines, and putting upon

them the clef, flats, and sharps. Afterwards he marked the notes, at first white, and then blackened those which were to be black; the words were written under, and once happening to make them too long, he quickly perceived that they were not exactly under the corresponding notes; he corrected this inaccuracy by rubbing out what he had written, and putting the line below with the greatest precision."

This somnambulist had a clear mental perception of the results of his operations, but he could not have seen them, because an opaque body was interposed between the organ of vision and the object. Is there any evidence that he even felt the paper upon which he wrote or the pen held in his hand? The experiment of changing the paper for one of a different size is not conclusive, for he possessed the power of perceiving, without the intervention of sight, and probably also without the sense of touch.

"One of Gassendi's somnambulists used to rise and dress himself in his sleep, go down to the cellar, and draw wine from a cask: he appeared to see in the dark as well as in a clear day; but when he awoke either in the street or in the cellar, he was obliged to grope and feel his way back to his bed. He always answered his wife as if awake, but in the morning recollected nothing of what passed." The sense of touch did not guide the wanderer here, because the moment this faculty

was restored to the mind by wakefulness, it was scarcely sufficient to conduct him back ; "*he groped his way.*" All the other senses are as perfectly closed as sight and feeling. The somnambulist does not hear, but he perceives sounds, and replies to their influence. The blast of a trumpet may be blown upon him and he hears it not ; but the gentle vibrations of a whisper, when in harmony with his train of thought, may be perceived.

"Pigatti says that Negretti sat down to eat a bowl of salad which he had prepared. It was taken from him, and some strongly seasoned cabbage put in its place ; this he eat without perceiving the difference, as he did also some pudding which was presently substituted. At another time, having asked for wine, he drank water which was given to him. He sniffed ground coffee for snuff, which he had demanded." Again, as related by the Archbishop of Bordeaux, the subject "asked for a glass of brandy to warm him ; as there was none at hand, they gave him water, but he detected the deception, and again demanded brandy. He drank a glass of strong liquor, and seemed refreshed ; but, without awaking, lay down, and continued to sleep soundly." Again, Castelli, a sleep-walker, "was found one night in the act of translating from Italian into French, and looked for words in a dictionary as usual, being asleep. His candle being extinguished,

he found himself to be in the dark, groped for a candle, and went to light it again at the kitchen fire." "Bertrand thinks that Castelli did not really experience the want of light, because the room was, as we are informed, actually illuminated at the time by other candles."

* * * "When any one conversed with him on a subject on which his mind was bent, he gave rational answers." In the case of Castelli, the senses *appeared* to be intact when they were impressed in regard to the subject-matter of his thoughts, but in all other particulars they were closed. He neither heard nor saw, but he perceived light and sound when their influences were in harmony with his own thoughts.

Dr. Binns says, "In the capital of the island of Syra, there is a young man from a town on the borders of the Black Sea, aged eighteen years, tall in stature, and of robust constitution, who went to Syra about twelve months ago to follow his studies at the Gymnasium. It frequently happens, that almost immediately after falling asleep, he gets up and makes remarkable declamations. Sometimes he recites very long speeches from Xenophon with perfect correctness, although when awake he cannot remember more than a few lines. One night he wrote the theme he had to deliver the next day. In the morning, having overslept himself, he was vexed at not having time to prepare himself for his tutor, but great was his astonishment

at finding on his table his stipulated composition, written with his own hand, folded, and ready to be given in. The professor was surprised at finding it so well done, and still more so when the young scholar became embarrassed, and unable to answer certain questions put to him on the subject. Doubts were entertained as to its being his own work; but a companion who slept in the same room with him, came voluntarily forward, and declared that in the night he saw his fellow-student seated at the table writing, and calling upon his father to assist him in composing his theme. When in a state of somnambulism he plays at cards, and uniformly wins. This is attributed to his having the faculty at that time of knowing what cards are in the hands of the rest of the party. When in this state, also, he has been taken by his companions to a tavern; and when, after eating and drinking with them, he awoke, he was greatly astonished at finding himself where he was. It appears that in this somnolent state his sense of feeling is entirely suspended, while all the other senses are alive and active. At first the slightest touch would wake him; but now he is totally insensible to any violence, even that which would in others, or in himself, when awake, cause pain. In general, on coming out of this state of somnambulism, he is so weak and languid as to faint away. One fact is more extraordinary than the rest. One day,

when in his dormant state, he announced that three persons whom he named were coming to see him ; in an hour after, these three persons entered his room."

Here are fallacious appearances of sensational integrity. The error consists in confounding the perception of an object with the transmission of it by the senses. He neither saw, nor heard, nor felt ; but he knew he was writing, speaking, and eating by other means than through the ordinary channels of information. He had knowledge independent of external sensation, and held control over his actions ; but on recovery he had no remembrance of what had transpired. When "he awoke he was greatly astonished at finding himself where he was."

In all these cases, we think there is abundant evidence of the absence of external sensation ; but that the mind perceives external relation in a certain degree, there can be no doubt. The perplexing circumstance is, that while one quickly perceives the difference between brandy and water, another drinks water and supposes himself refreshed with wine. One, without perceiving the lights burning in his presence, is immediately aware of the extinguishment of his own candle, and "gropes his way when in an illuminated apartment to relight it."

Mesmerism is analogous to this peculiar condition of mind and sense. The difference is, that in somnam-

bulism it is spontaneous, and the mental faculties acknowledge no impression but what is in harmony with their train of thought : while, in mesmeric sleep, the mind is directed—not controlled by the mesmerizer. And as before stated, when examining the subject of animal magnetism, there is probably no power of creation in the case, but the mind presents its peculiar character when left to its own powers. If the perception is obtuse when awake, in sleep it may exhibit the same qualities ; and be quite likely, from want of attention, to drink water for wine, or sniff ground coffee for snuff when offered.

Not unfrequently fatal accidents happen during the perambulations of the sleep-walker. They generally occur just as the person is emerging, either spontaneously or otherwise, from the somnambulic state. This, however, is not universally the case. The fate of the sailor, Jack Sutton, a sleep-walker on shipboard, representing the principal personage in a celebrated ghost-story, is an exception. He walked overboard while in this state in the night, and was lost. Accidents may also occur when the somnambulic state is imperfect ; the influence of external as well as internal causes may so perplex the individual, that he is confounded, and lost from this circumstance. But when suddenly aroused to a realizing sense of his condition, and finding himself in extraordinary situations, such as when awake

he would not venture upon, self-possession is lost, and he is precipitated from his often giddy heights.

Dendy says—"In a Gazette of Augsburg I have read this sad story: 'Dresden was the theatre of a melancholy spectacle on the 29th ult. As early as seven in the morning, a female was seen walking on the roof of one of the loftiest houses in the city, apparently occupied in preparing some ornaments as a Christmas present. The house stood as it were alone, being much higher than those adjoining it, and to draw her from her perilous situation was impossible. Thousands of spectators had assembled in the streets. It was discovered to be a handsome girl, nineteen years of age, the daughter of a master-baker, possessing a small independence bequeathed to her by her mother. She continued her terrific promenade for hours, at times sitting on the parapet and dressing her hair. The police came to the spot, and various means of preservation were resorted to. In a few minutes the street was thickly strewn with straw, and beds were called for from the house, but the heartless father, influenced by the girl's stepmother, refused them. Nets were suspended from the balcony of the first windows. All this time the poor girl was walking in perfect unconsciousness, sometimes gazing towards the moon, and at others singing or talking to herself. Some persons succeeded in getting on the roof, but dared not

approach her, for fear of the consequences if they awoke her. Towards eleven o'clock she approached the very verge of the parapet, leaned forward, and gazed upon the multitude beneath. Every one felt that the moment of the catastrophe had arrived. She rose up, however, and returned calmly to the window by which she had gone out. When she saw there were lights in the room, she uttered a piercing shriek, which was re-echoed by thousands below, and fell dead into the street.' "

By practice, some individuals may accommodate themselves to any enterprise within the laws of nature. Gall, in alluding to this subject, says, "Some persons think that somnambulism is a completely extraordinary state, because somnambulists execute during their sleep things which they could not accomplish awake: they clamber on trees, roofs, &c. All astonishment ceases as soon as we reflect upon the circumstances in which we do the boldest things, and upon others in which we cannot. Any one in a balcony, furnished with a balustrade, could look down from a very high tower, and without resting against this balustrade. We walk without tottering upon a plank placed upon the parapet. To what will not boys accustom themselves in their rash sports? What do not mountaineers in their pursuit of the chamois, rope-dancers, tumblers, and others perform? But take the balustrade from the balcony,

let us but discover an abyss to the right and left of the plank, and we are lost. Why? Is it because we are not in a condition to walk upon the plank? No. It is because fear has destroyed our confidence in our powers. Now let us judge of the somnambulist. He sees distinctly what he is about to do, but the organs which would warn him of danger are asleep; he is therefore without fear, and executes whatever his bodily powers allow him successfully to attempt. But wake him: instantly he will perceive his danger, and give way.

Our view of the rationale of somnambulic sleep differs materially from that just quoted. The somnambulist *perceives*, he does not *see* whatever he is about to do with the visual organs of the insomnist, because observations show his eyes to be either closed, or rigidly set and staring; in which case, even when awake, he cannot see. Neither does he perceive objects through the other external senses as when awake, because they also are closed, as experiments prove, to the common stimuli applied in the ordinary way. The mind in this condition has an external relation *sui generis*, corresponding in some degree with our normal existence, and subject to the ordinary governing principle of the normal state. The mind, under any circumstances, requires a paramount object to accomplish extraordinary undertakings, and when this object

is sufficient to absorb and direct the attention solely to its accomplishment, we can pursue a path, sufficiently capacious to receive our footsteps, without the assistance of balustrades to insure our safety. Just so with the somnambulist; the object with him is single and paramount, and when the immutable laws of nature are not infringed, he is just as safe as the most experienced aeronaut in his undertaking. It is not because a part of his mind is asleep, but because the organs unnecessary to the accomplishment of his purpose are passive, or subdued by the extraordinary activity of those engaged. We might further assign in evidence of mental sleeplessness, the fact, that change of circumstances alters in some instances the object and intention of the somnambulist, for when Signor Augustin—an Italian nobleman and celebrated somnambulist—“came below, one of us made a noise by accident; when he appeared frightened, and hastened his steps,”—“and sometimes he ran as if he were pursued, if the least noise was made by those standing round him,”—and “upon hearing a noise which the servants made in the kitchen, he listened attentively, went to the door, and held his ear to the key-hole.”* In this state the mental action is far more powerful towards the accomplishment of a single purpose than

* See Pritchard on Insanity.

during wakefulness, because when awake the attention is divided by the multiplicity of surrounding objects.

In many cases of somnambulism, the mind seems not to participate with the body. The somnambulist receives the first impulse from the will; after which, locomotion is continued by the influence of reflex and associate action. Dr. Dendy, in alluding to the fact that the soldiers, in the retreat of Corunna, slept while marching, very philosophically observes that "These soldiers did not walk in their sleep, but slept in their walk." The case of the individual, related in a former chapter, who leaped from the hotel window, and was found clinging to a lamp-post, apparently unconscious of his situation, was of the same kind. The mind required a change of place, and the locomotive apparatus was started by volition. There was no return sensation indicating the change. The mind required none; for by its own constitution it inferred that the change was made, because it had willed it, and therefore became satisfied; and locomotion, once induced, may be continued by the power of reflex action, which is not dependent on the mind, but requires merely the stimulus of its own regular series of motion to continue in operation until arrested by the will, or overcome by physical resistance. Had not the lamp-post intervened, he would undoubtedly have progressed until he came in contact with some other insurmountable obstacle.

The consideration of sleep-talking belongs to this branch of our subject, because the rationale of its phenomena is identical with that of sleep-walking, though a much lower degree of mental intensity suffices to induce it. Those individuals familiarly denominated *sleeping preachers*, are of this kind; and the following, which Dr. Berkley, the narrator, calls a case of double consciousness, is of considerable interest.*

“Mrs. N. B., a married woman, aged 39 years, has been subject to neuralgia of the face for about 17 years. She is otherwise a healthy woman. Five or six years ago the disease became very violent, and assumed a strictly periodic type, returning every two weeks—at which time she suffered the most excruciating agony in the course of the fifth pair of nerves of the right side of the face. After suffering two or three hours in this way, she not unfrequently becomes sick at the stomach, and would vomit and purge. All these symptoms after a while subsiding, she would become entirely insensible to all external impressions. In this situation she would commence preaching in a loud and clear voice, and continue from two to three hours. She would then sink down as if she had fainted, and in fifteen or twenty minutes awake without the least knowledge of what had transpired.

* Amer. Jour. Med. Science, 1847.

“ She had these periodic spells of preaching for five or six years, every two weeks regularly, never having missed but two or three times. The case having attracted much attention, Dr. B. was induced to visit the subject of it during one of her attacks, and gave the following account of what he observed. He arrived at nine o'clock A.M., and found Mrs. B. sitting in an arm-chair, suffering all the agony of a severe attack of facial neuralgia of the right side, though somewhat different from most cases of that disease. There was no twitching of the muscles, great turgescence of the vessels of the face and neck, muscles of the neck very rigid, eyes very red, excessive intolerance of light, so much so that she could scarcely bear to elevate the eyelids.

“ She says she feels an almost insupportable weight, like an incubus, upon her head ; there is an abundant secretion of saliva, which is altogether from the right side of the mouth. I talked with her about an hour, or as long as she was capable of talking. I found her a very intelligent woman ; she wished to know if there was nothing that would relieve her. I asked her if she had undergone any medical treatment. She said she had ; that several eminent physicians had given her medicine. She had been cupped, her head shaved and blistered, ointment of veratria applied to the course of the nerve, and all the noted antiperiodics given in suc-

cession without the least benefit. She thought that under the tonic treatment she had got worse.

“ She continued to get worse and worse from the time I went into the room until about eleven o’clock, when her eyes closed, and she became perfectly insensible to external impressions. In this situation she commenced talking.

“ She was placed in the sitting posture, in a large room where a great number of strangers had collected. When she first commenced talking, she appeared to be choked with a frothy saliva, but she soon cleared her throat, and preached for two hours and ten minutes, in a clear and distinct voice—sufficiently loud to be heard a hundred yards. Sometimes her appeals would be the most pathetic and eloquent I ever heard. The first warning you have that she is about to conclude, is the free spitting up of this frothy saliva. As soon as that appears, she falters and falls over. She continues insensible for fifteen or twenty minutes, all the time spitting up this saliva, when she awakes by yawning like a person who had been asleep, and looks about with a vacant stare. She soon, however, regains her senses, and looks like another person, and knows nothing of what has transpired.

“ The most remarkable circumstance connected with this case is, that she can neither see, hear, nor feel during all the time she is preaching. She is not dis-

turbed by any noise that may be made, and if pricked by any sharp instrument, does not flinch, and her eyes are closed during the whole time."

Dr. Berkley relates this as a case of double consciousness, but we do not consider it as such, because there was no connexion between the pathological condition and its preceding homogeneous attacks, although the patient did exhibit a periodic abnormal state. For an individual to possess double consciousness, there must be a corresponding identity in each state of the same kind. The mental peculiarities of the abnormal states must be in as perfect harmony with each other as those of the natural: and the two states must not only present a character totally distinct, but each must be connected with the preceding states of the same kind, so that either condition has a separate and distinct consciousness connecting its alternate fragments into a perfect whole. In fact, the subject, to be doubly conscious, must present, alternately, the mental characteristics of separate and distinct individuals.

The case, however, is important, in that it furnishes additional evidence of the dependence of memory upon sensational integrity. In the further consideration of the subject in its connexion with memory in our conclusion, we shall present a case exhibiting the peculiar features of double consciousness.

The mind in somnambulism is always conscious. It

may or it may not perceive external relation, but the physical phenomena show conclusively that the mental being is at work. It will appear, when examining, in our concluding remarks, the memorial power, that the mind may be cognisant of surrounding circumstances, and yet retain no remembrance of them, because sensation—the foundation upon which memory rests—is wanting.

CHAPTER V.

INCUBUS.

SLEEP, with an overpowering influence, wraps us into forgetfulness of ourselves. It envelopes in its sombre drapery, the votaries of pleasure and the subjects of sorrow. A helpless—inanimate—unconscious submission is yielded to its dominion, and a solemn calm rests alike upon all. It dispenses to the fatigued frame—refreshment; to the diseased body—a balm; and to the care-worn, a short oblivion of their woes.

Is this neutrality of our hopes and fears and passions undisturbed? Does this power, controlling our sensibilities, shield us from harm? Do we remain unmolested in this defenceless condition, regaining bodily activity and mental energy? Or is this state also subject to evils? Alas! it is; for dreams do come, that, in their varied structure, harass the inmost soul with dread, and

“On his nightmare through the evening fog,
Flits the squab Fiend o’er fen, and lake, and bog.”

Incubus and nightmare are terms applied to a disease,

deeply interesting both to the physician and to the patient. To the physician, because no satisfactory explanation of its phenomena has been given, all being mere speculation not founded on facts, neither supported by correct pathological reasoning: and to the sufferer, for it seizes him under circumstances frightful in themselves, occurring mostly at dead of night, when assistance is least easily obtained, and he being rendered totally helpless.

It makes its attack on the system in that stage of sleep when the external functions are impaired, and the imagination is free from those restraints imposed upon it in the state of wakefulness by the judgment. The mind, roving through various scenes and producing effects only experienced in dreams, and best described by reference to them, arrives at a condition in which fear is the most prominent emotion. The dreamer often believes himself shipwrecked, and left to the fury of the winds and waves; or he is fast approaching the brink of a dread precipice, without the power to turn aside, and over which he must unavoidably fall; or he is pursued by wild beasts intent on devouring him, and through all, he feels spell-bound and unable to help or defend himself: he struggles with all his power to be released from this frightful situation, but apparently to no purpose, until at last when he considers his destruction inevitable, a sudden bound

frees him from his condition, and a dream is disclosed, which he believes to have been the cause of his sufferings.

The effects produced by a paroxysm of incubus are very great. Immediately after recovery, the pulse is a little quickened; a tremor of the abdominal muscles is experienced, and extreme lassitude is felt throughout the whole frame. A want of energy characterizes this state; and as the first shades of sleep again descend upon him, he very perceptibly feels the approach of the disease a second time, but under different circumstances. From a lack of energy to change his position and shake off the predisposition now formed, he remains quiet, perfectly conscious of the advancing symptoms which are gradually stealing over and strengthening upon him, until the power of voluntary motion is again suspended, and he is in a condition differing from the first, inasmuch as he is conscious of his situation. He now attempts to change his position, but without success, and it is only after repeated trials that he succeeds in accomplishing his object. The same lassitude continues as after the first attack, and the second will be followed by a third with the same symptoms, and the third by a fourth, and so on until his exertions are sufficient to throw off the disease, by producing an action throughout the whole voluntary muscular texture.

There is no particular position necessary for the occurrence of this disease. It makes its attacks in any position that a person can lie in, and the sitting position is not exempt from its effects.

This disease may be divided into the first and second paroxysms, or that which is accompanied by a dream, and the succeeding attacks in which we comprehend our situation.

In addition to the feelings described in the first paroxysm, there is the sensation of a load upon the chest, and some fancy it a monster attempting to suffocate them. From this paroxysm very little information can be obtained; the person on awaking attributes all his sufferings to the dream which he considers the cause of his distress.

It is by attending strictly to the phenomena of the succeeding attacks, that a knowledge of the pathology of the disease can be obtained. In these attacks many faculties of the mind are active, and restrained to their proper course by the judgment. This is displayed in the exertion to move one part of the body and then another alternately, knowing that if we succeed, relief will be obtained. Neither is the memory dormant, for when previously we have been told that some of the senses are not impaired, and that we can exercise certain muscles, we are sure to make the trial. A person laboring under the second paroxysm, if the room be

sufficiently light, can see whatever comes directly in front of him; he can hear the breathing of his bed-fellow, and is conscious of conversation when it takes place in his presence; he has the sense of touch, for he is aware of his contact with the bed-clothes, and also of irregularities in their position under him; he can move his under jaw with ease perpendicularly, but has no power to produce a lateral motion; he knows that he breathes, but with much difficulty; he has the power of natural voice, but not of speech, and volition is perfect, but the organs of locomotion are not obedient to its mandates.

These are the facts upon which we are to determine its pathological character, and upon which we are to build our hope of success in removing the obscurity hitherto surrounding the location and cause of this disease.

The *remote causes* of this affection are violent mental agitation—fear—also great fatigue of body, and in truth whatever wearies the mind or body beyond their healthy endurance. But the most prolific cause is overloading the stomach before retiring to rest. The *proximate cause* consists in one part of the system requiring a greater amount of nervous power than is naturally appropriated to it; and as the extremities of the nerves cannot provide the deficiency, this extra quantity must be supplied from some other part; con-

sequently the part from which the deficiency is made up is left in an unnatural condition, and thus results this affection.

This disease we consider to be purely nervous. The attendant dyspnœa and congestion are its consequent, and not the cause, as has been believed and supported by pathologists. But before proceeding further, we would remark, that the nervous function is subject to the strangest anomalies connected with our system:—that its various uses are continually merging into light:—that previous to the late discoveries of distinct functions connected with different filaments and the regularity of the origin of each set of nerves, and that their property depends upon the part from which they are derived, the subject was enveloped in comparative obscurity. The discoveries lately made in the phenomena of reflex and associate action, have served to dissipate, in some degree, the uncertainty in which the physiologist has been involved. It is by carefully regarding these discoveries, in connexion with the phenomena presented by the disease, that its pathology can be determined.

The anterior column of the spinal marrow and the nerves arising therefrom, are the seat of incubus. This being the case, the nerves of feeling, arising from the posterior column; of respiration, arising from the lateral column; of vision and hearing, originating

from the brain ; and the brain itself ; are not involved in the disease. We are now able to account for its various phenomena.

The faculty of the mind in reasoning, the active state of the memory and volition, are qualifications belonging exclusively to the brain, and are not the subjects of this disease.

The sense of touch is the peculiar property of the filaments originating in the posterior column of the spinal marrow, and therefore is not operated upon by this affection.

The act of respiration is continued, but somewhat impaired, being very laborious. The muscles performing this operation are supplied with three sets of nerves, all differing in their functions ; one set from the anterior column, being the nerves of voluntary motion, and combined with another set from the posterior column, conveying sensation ; and a third set from the lateral column, being those of respiration. The first set, which is the seat of the disease, may be regarded as the cause of the dyspnœa. The process of breathing is effected by the nerves of respiration in conjunction with those of volition, the first not being sufficient to the perfect performance of this office without the co-operation of the last. If from any cause the voluntary muscular action is suspended, the motion of the thorax is diminished, and an intolerable

sense of pressure and suffocation is the result. From this circumstance the name of the disease originated, viz. incubus, from the Latin, signifying one who lies upon. The tremulous motion experienced in the abdominal muscles, after the paroxysm, we conceive to be caused by an irregular return of nervous influence to them.

All the muscles of the face are subject to the will, but are unaffected by the disease, and the countenance expresses great anxiety. These muscles, with many of the neck, are supplied by the *portio dura*, which is a nerve of respiration, expression, and volition in the muscles to which it is distributed. This accounts for our being able to move the lower jaw in a perpendicular, but not in a lateral direction; the muscles of the face and throat being competent to produce this motion without the assistance of those of mastication, these latter being supplied with a branch from the fifth pair, and of these muscles the *pterygoideus externus* is that which causes the lateral movement; over these muscles of the jaw we have no control.

To account for the faculty we possess of seeing objects that are in a line perpendicular to the face during the paroxysm, and only those in that direction, requires our attention to the functions of the various parts of which the organ of vision is composed.

It will be readily perceived, that as the optic nerve

arises from the brain, its functions cannot be impaired ; but when we consider that the situation of the *globus oculi* during sleep excludes the light, both from the elevated position of the pupil and the closure of the *palpebræ*, and in addition to these, the inactive condition of the voluntary muscles during the paroxysm of *incubus*, we are perplexed to solve the problem. Medical philosophy, however, furnishes the clue by which to unravel the mystery.

The muscles of the eyelids are supplied with nervous twigs from the *portio dura*, and hence are not under the influence of the disease. But how shall we account for the phenomena, when it is known that the pupil is raised above the margin of the elevated lid ? The ball rises from the relaxation of the superior oblique, and this muscle is furnished with a distinct nerve, which arises from the summit of the column that originates the nerves of respiration ; consequently the disease does not affect this muscle. Now all the motions of the superior *palpebra* are accompanied with an opposite movement of the superior oblique, as when the lid falls the eyeball rolls upwards, and vice versâ. Their actions are attendant upon each other, and are both voluntary and involuntary. The nerves of respiration endow their muscles with this double quality. Their movements only open the eye and bring the pupil in the most anterior direction, but

further command over the organ they have not. The recti muscles give the various directions to the eye, but they receive their nerves from the motor division, and are solely for voluntary motion, consequently under the influence of the disease ; so that, although we cannot roll the eye in its orbit, yet we can see whatever comes directly in front of us.

The sense of hearing is conveyed to the sensorium by the portio mollis, a nerve originating in the brain. But the function of this apparatus would avail nothing without the action of the muscles connected with the internal structure of the ear. These muscles are furnished with branches from the fifth and seventh pair of nerves ; and as the seventh pair are nerves of muscular motion to the face and neck, we may safely conclude that the same influence is exerted on these muscles producing the necessary action for conveying sounds.

The larynx receives its nerves in four branches from the par vagum, which is the principal nerve of respiration, and by these we are endowed with natural voice, which we are capable of exercising when under the influence of this disease ; but of the faculty of speech we are deprived, the tongue being furnished with its nerves of voluntary motion from the anterior column of the spinal marrow, being the twelfth pair of Mr. Charles Bell.

The action of the heart continues. This centre of the circulation, so necessary to the continuance of life under all circumstances, is supplied with branches from the par vagum, and when its functions are deranged in this disease, it is from sympathy with the lungs. The motions of the heart are less under the influence of that portion of the brain manifesting the passions or feelings than the lungs are, and it becomes disturbed, not from its dependence upon the brain, but from its association with respiration; and as before stated, the derangement of respiration is caused by a suppression of nervous influence to the voluntary muscles of the thorax and abdomen.

Rest, in general, retards the healthy pulse, but when the stomach is oppressed with a heavy meal, and the person falls asleep, the pulse becomes much quickened. As the powers of volition subside, those of organic action increase, and the action of the heart and arteries is augmented by the aggravated operations of the stomach. This being the case, incubus cannot be the effect of stagnation of the blood, for it invariably occurs under some extra irritation. The theory that this is a disease of congestion, is entirely hypothetical. The symptoms indicating such a state of the vascular system are neither sufficiently numerous nor well marked to have any weight in fixing it as the proximate cause. What congestion there may

be is more easily accounted for as an effect than a cause of this disease.

Incubus differs from coma, inasmuch as in the latter there is neither consciousness of surrounding circumstances nor volition; and in asphyxia, consciousness is apparently lost, volition is suspended, and there are no perceptible respiratory or arterial actions. There is no suspension of volition during the paroxysm of nightmare; the endeavors of the victim to escape the sufferings are vehement. It differs from revery, as well as catalepsy, in being intercepted by the action of the voluntary muscles, excited either by the will or by the application of external force. After a paroxysm of nightmare, the ideas and sensations are distinctly remembered; but on recovery from the former affections, there is no remembrance of what passed during their continuance. They leave a blank in the memory of existence.

It is our settled conviction that death never is an effect of this disease, because, when the painful sensations acquire a certain degree of severity, the reflex power will come into play and end the disease. We know from experiment that motion intercepts its progress, and we also know that the voluntary muscles universally come into action previous to dissolution, unless it supervenes upon typhus, where the irritability of the system is worn out, or upon the effect of elec-

tricity, or the exhibition of some of the virulent poisons, as hydrocyanic acid; and as before remarked, this action of the voluntary muscles, by equalizing the nervous influence, ends the paroxysm, or in other words, the disease destroys itself.

The course of treatment to be pursued in this affection is prophylactic. The principal indication is, to keep the nervous influence as equally balanced as possible. This is to be accomplished by preventing undue excitement in the thoracic or abdominal viscera. Food should not be taken in large quantities immediately before retiring to rest, because when the stomach is engorged, it requires, under all circumstances, a greater amount of nervous influence than is appropriated to its natural process of digestion, but more particularly in the state of sleep, for then digestion proceeds more rapidly, and the action of the voluntary organs having ceased, the whole current of nervous power expended on them in wakefulness, is drawn to the stomach with so much avidity that they are left without a sufficient amount to be acted upon by the will, and thus arises this affection.

To those habitually afflicted with this malady, we would recommend an alarm watch, set to awake them at short intervals, and kept at such a distance from their beds, as to oblige them to leave it whenever it required resetting. The voluntary action thus produced will

be sufficient to equalize the nervous influence. For the digestive process decreases in proportion to the return of voluntary action.

In conclusion: first, this disease is purely nervous: secondly, it is consequent upon a deficiency of nervous power in one part of the system, occasioned by a greater demand for it in another part; and lastly, it is confined to that division of the nervous texture designed entirely for voluntary motion, leaving all other functions of the organization in their normal condition.

NOTE.—With the exception of some unimportant alterations and corrections, the preceding remarks on Incubus were published by the author in Vol. XV. of the Amer. Jour. Med. Sciences for 1834. Our apology for republishing it is, that it forms a portion of the general subject under consideration, and from further experience (for we have suffered from its attacks since our earliest remembrance), the conviction that the views then expressed were pathologically correct, has been greatly strengthened.

CHAPTER VI.

TRANCE.

It is not our intention to examine the causes of trance, much less to give a detailed history of this singular affection; but for the purpose of showing the connexion between sensation and memory, it becomes necessary to present its leading physical features, and to exhibit, as far as may be, the condition of mind during its continuance.

Physically considered, it presents the ordinary appearance of the body after dissolution; and exhibits the mind either in an unconscious state as regards external relation, or a susceptibility to surrounding circumstances.

We find the symptoms admirably detailed by Macnish in his *Philosophy of Sleep*. He says: "During its continuance, the whole body is cold, rigid, and inflexible; the countenance without color; the eyes fixed and motionless; while the breathing and the pulsations of the heart are, to all appearances, at an end. The mental powers, also, are generally suspended, and participate in the universal torpor which pervades

the frame. In this extraordinary condition the person may remain for several days, having all, or nearly all, the characteristics of death impressed upon him."

To communicate its phenomena more particularly, we will relate several cases, as nearly to the purpose as may be.

A young woman, who for a long time had been confined with a nervous derangement, gradually failed, until at last, as was supposed by her attendants, she died, but in fact had only fallen into trance, from which she recovered after the burial service was nearly completed, and the coffin lid was about to be nailed down. During the whole period she was cognisant of her condition by the senses of hearing and touch.

"It seemed to her," she said, "as if she was in a dream, and that she was really dead; yet she was perfectly conscious of all that happened around her in this dreadful state. She distinctly heard her friends speaking, and lamenting her death, at the side of her coffin. She felt them pull on her dead clothes and lay her in it. This feeling produced a mental anxiety which is indescribable. She tried to cry, but her soul was without the power, and could not act in her body. She had the contradictory feeling, as if she were in the body, and yet not in it, at one and the same time. It was equally impossible for her to stretch out her arm, or to open her eyes, or to cry, although she con-

tinually endeavored to do so. The internal anguish of her mind was, however, at its utmost height when the funeral hymns were begun to be sung, and when the lid of the coffin was about to be nailed on. The thought that she was to be buried alive was the one that gave activity to the soul, and caused it to operate on her corporeal frame.”*

Dr. Duncan of Edinburgh relates the case of a “female who was about to be interred alive. She heard the conversation of the persons present, endured the horrors of seeing her own body prepared for the grave, of being laid out, and the toes tied together, and the chin and jaws enveloped in a bandage! but, when her agony reached a certain point, the spell was broken, she shouted, and was saved.”† Dr. Duncan considered this a case of catalepsy, but Dr. Binns, more correctly, thinks it one of trance.

In these two extraordinary cases of trance, it is evident that the several senses were keenly alive to external impressions.

Let us now take an instance where the patient was, so far as can be determined, unconscious of all about her.

“Mrs. Godfrey, sister to the great Duke of Marlborough, had been for a long time ill, in consequence

* Psychological Magazine.

† Binns's Anatomy of Sleep.

of anxiety brought on by the recent death of the duke ; but, one Sunday, fancying herself better than usual, determined to rise, and go to chapel. Probably from unaccustomed exertion, or absolute debility, as she was dressing for that purpose, she fell down, and to all appearance expired. The screams of her attendant, and a lady who was in the room with her, brought Colonel Godfrey to their assistance, who, probably having seen persons similarly attacked, directed that she should be immediately put to bed, and that two persons should sit up constantly with her, till positive symptoms appeared of dissolution. The opinion of the physician was that life was extinct, and his friends entreated Colonel Godfrey to allow her to be interred ; but he resisted all their persuasions, continuing firmly to adhere to his first resolution, until the Sunday following, when exactly at the same hour as the syncope, asphyxia, or trance, had attacked her on the preceeding Sunday, signs of returning animation were perceived in the body, and she awoke just as the church-bell was ringing for service, which so perfectly eradicated, says the authoress, every trace from her memory of her insensibility, that she blamed her attendants for not waking her in time to go to church, as she had proposed to do. Colonel Godfrey, taking advantage of her unconsciousness of what had occurred, gave orders that she should by no means be made

acquainted with what had happened, lest it should make a melancholy impression on her mind; and it is supposed that to the day of her death she remained ignorant of the infliction."

There are many singular instances of anomalous states on record, which, by different psychologists, are treated of under various denominations of disease. Nicolai read to the Royal Society of Berlin in 1799, a *Memoir of Spectres*, in which we find the following case. He says, "My much-lamented friend, Moses Mendeljohn, had, in the year 1792, by too intense an application to study, contracted a malady, which abounded with particular psychological apparitions. For upwards of two years he was incapacitated from doing anything; he could neither read nor think, and was rendered utterly incapable of supporting any loud noise. If any one talked to him rather in a lively manner, or if he himself happened to be disposed to lively conversation, he fell in the evening into a very alarming species of catalepsy, in which he saw and heard everything that passed around him, without being able to move a limb. If he had heard any lively conversation during the day, a stentorian voice repeated to him, while in the fit, the particular words or syllables that had been pronounced, with an impressive accent, or loud emphatic tone, and in such a manner that his ears reverberated."

Nicolai relates this case as a "species of catalepsy," and Dr. Binns says, "It is, more correctly speaking, one of trance." We think it was not catalepsy, because the senses received and conveyed impressions, and the memory retained them. It was not trance, we apprehend, because none of the symptoms of that morbid state accompanied it; he was not even thought to be dead. It could not have been incubus, which it very nearly assimilated, for the causes are incompatible with the pathology—it did not supervene on sleep, and its phenomena were not limited to circumstances present, but revert to what had already transpired. Such a case, full of interest to the psychologist, we conceive to be one of hallucination, associated with excessive irritability of the auditory nerve, and belonging to neither class in which it has been placed. The instance of a lady who was in the habit of ejaculating "Oh Christ!" on every trifling occasion, to be related when examining catalepsy, is of the same character; and both, in a psychological point of view, bear considerable resemblance to the case of Tasso.

On this occasion we feel constrained to digress somewhat from the psychology of our subject, for the purpose of giving a few instances in which persons have been buried alive while in this state. There is, probably, no single idea so replete with horror, as that of being interred before life is extinct; and yet the not

uncommon practice of burial, ere the sun has twice set upon the lifeless body, is witnessed without any emotion, or even a thought that this may by possibility be the unhappy result. This custom is so reprehensible, that in the absence of affection, duty, or respect for the cast-off earthly tenement of a divine emanation, the law should specify the time to elapse between death and sepulture when positive evidence of dissolution is absent, to save from the horrors of a living tomb. Every individual is deeply interested in this subject, for so long as the present custom is allowed, each and all of us are liable to suffer the agonies of a death so dreadful.

It may be asked, if we are liable to deception in regard to the presence of the vital principle, by what means shall it be tested beyond the possibility of error? The answer is, that in the absence of organic lesion, decomposition is the only positive evidence that life has departed; for as soon as life is extinct, chemical affinity is busy in re-arranging the particles of the lifeless mass. And still, great circumspection is required in determining when this change has taken place, because the odor of gases continually escaping from the body may possibly be the cause of error in decision. It appears from late experiments and observations, that flaccidity of the iris after death may be used as a test. "M. Rippault proposes to apply the circumstance of

the iris becoming flaccid after death as a means of distinguishing between real and apparent death; for in the former case he finds that the pupil loses its circular form when the globe of the eye is compressed in two opposite directions; but, on the contrary, retains its round form so long as life and the power of vision remain.”* But as this may prove erroneous, we repeat that the only reliable test is that of *chemical decomposition*.

We present a few cases of premature interment:—
 “Upon our arrival in Dublin, my mother and myself were very kindly received by Dr. Walker. The doctor, at this time, was writing a treatise against the Irish custom of burying the dead within a few hours after their decease. When my mother heard on what subject he was writing, she related to him the story of Mrs. Godfrey, and as soon as she had concluded it, she promised, that if she should be in the same kingdom with him when he died, she would attend to the corpse, and take care that it was not entombed whilst there was the least probability of return to life. * * *
 The sequel of the story is, that, some time after, Dr. Walker fell ill of fever, and Mrs. Bellamy, one afternoon, sending to inquire after him, the servant returned, and informed her, that he had died during

* American Journal Med. Sciences, 1847.

the night, and that they were going to bury him : she added, that as they were about to shroud the body, the orifices which had been made in the arms for letting blood, had bled afresh. For reasons which are stated, neither Mrs. Bellamy nor her mother could go to the doctor's that night, and they therefore sent the servant in a coach, directing, if the body was interred, to have it taken up at all costs, for they had learned that Mrs. Walker had been persuaded by her sister to leave the house, and retire with her to Dunleary. The servant, while on her way, either from apprehension or love of company, contrived to take several persons with her, and, on arriving at the doctor's, found the body had been interred immediately after she had left, lest the disease of which he had died should be infectious. She also learned that, Mrs. Walker being a dissenter, the body had been interred in the Anabaptist burying-ground, at the other end of the town. She proceeded therefore in search of the sexton, still accompanied by her friends, but as they could not find his house, they clambered over the gate, and got round the grave, where the servant alleged she heard a groan. About daybreak, by means of some laborers who informed them where he lived, they found the sexton, who, after considerable hesitation, disinterred the body ; and, on opening the coffin,—‘I shudder while I relate the horrid scene,’ says the authoress,—

‘they found the body now totally deprived of life, but observed that the doctor had endeavored to burst it open, had turned upon his side, and the arms had bled afresh! The family, however, hearing of the circumstance, the body was ordered to be re-interred, and the affair was hushed up.’ *

Also from the same work, “An inhabitant of the Commune of Eymet (Dordogne),” says the *Presse*, “being attacked with a constant inability to sleep, applied to a medical man, who ordered him a sleeping potion. He soon fell asleep, but the next day, remaining in the same state of repose, his family got alarmed, and some one attempted to bleed him. No blood following the lancet, a more minute examination was instituted, and it was declared that he was dead. He was buried, but some time after it was suspected that the potion might have caused his apparent death. The coffin was in consequence opened, and the body was found turned completely round. The man had been buried in a trance, and had evidently attempted to force himself from his horrible prison.”

“Singular and distressing affair:—A highly respectable gentleman of Baltimore city, who transacted a mercantile business on the wharf, was taken sick and died, as was supposed, a short time since. Being a

* Dr. Binns’s Anatomy of Sleep.

native of an adjoining city, his wife and friends desired to inter his remains there, and his body was accordingly placed in a coffin and conveyed to that city. When the coffin arrived, it was opened in order to transfer the remains to a more suitable one, which had been prepared for the final interment. When the lid was removed, the body was found lying upon the face, which upon examination was bruised. A moisture was observed upon the skin, and on a close examination, it was found that the vital spark had not as yet fled. All the restoratives that the best medical skill could advise, were used, and the man was actually revived and lived for two days afterwards, before the 'spirit departed unto him that gave it.' No doubt was entertained here of the decease, and the feelings of relatives and friends at such a discovery cannot be for one moment imagined."*

The *St. Louis Republican* for December, 1843, contains the following: "Rescue from a living grave:—A young lady, belonging to a Jewish family in this city, died on Tuesday of a nervous disease, and yesterday her friends started with her remains for interment. According to a Jewish custom, the body is taken to the grave-yard in a square box, in the same covering in which the deceased person has expired, and there

* Philadelphia Ledger, June, 1847.

in a house appropriated for that purpose, the female friends of the family unrobe the body, wash it with cold water, and anoint it for its last resting-place.

“While performing this ancient custom upon the body of this supposed inanimate corpse, a healthful warmth evaporated from it, and evident signs of life became manifest ; the fact was announced by the females, physicians were sent for, and the sorrowful certainty of death which overshadowed the countenances of friends, gave place to a gleam of hope. On the arrival of the physicians, the certainty of her being alive was established and means taken to fan the spark into health.”

Again, “In October, 1830, a servant girl, who had retired to bed in apparently perfect health, was found the following morning, as it was supposed, dead. A surgeon who was sent for, pronounced her to be certainly dead, and stated that she had probably been so for some hours. A coroner’s inquest was summoned for four o’clock of the same day to inquire into the cause of death, and directions were given that a post-mortem inspection of the body should be made in the meantime. The reporter of the case was requested to give his assistance. Accompanied by the surgeon who had been consulted, he went to the house about two o’clock for the purpose of making the inspection. The deceased was found lying on the bed, in an easy pos-

ture, on her left side, her body forming somewhat of a semicircle. The countenance was pallid, but so perfectly placid and composed as to give her the appearance of being in a deep sleep. The heat of the body, although she must have been dead eight or ten hours, was not in the least diminished. The room was carefully searched, but nothing in the shape of poison, nor any other means of self-destruction, could be discovered. Every article of apparel lay round, as might be supposed to have been left by a person going to bed in perfect health as usual. The heat of the body not diminishing, a vein was opened, and various stimuli applied, but without producing any signs of resuscitation. The respiratory and circulatory process had ceased; no artery could be felt pulsating. Two hours had now elapsed since their arrival, and the parties still hesitated to perform the inspection, when a message was sent to them stating that the jury were waiting for their evidence. The inspection was then commenced, but on removing the body for the purpose, the warmth and pliancy of the limbs were such as to give the examiners the idea that they were inspecting a living subject. The internal cavities were so warm that a very copious steam issued from them when they were laid open. All the viscera were healthy, there were no signs of disease; nothing appeared to account for death, and from what they saw, the inspectors regretted that they had

not postponed the examination until the signs of death had been completely manifested. For obvious reasons, the name of the place where this extraordinary case occurred, and the name of the reporter, were suppressed. He had evidently communicated the details in a fit of remorse for his precipitancy.”*

The Paris Constitutionnel, 1846, states that the cases of premature interments prevented by fortuitous circumstances amounted in France since the year 1833, to ninety-four. Of these, 35 persons awoke of themselves from their lethargy at the moment the funeral ceremony was about to commence ; 13 recovered in consequence of the affectionate care of their families ; 7 in consequence of the fall of the coffins in which they were inclosed ; 9 owed their recovery to wounds inflicted by the needle in sewing their winding sheet ; 5 to the sensation of suffocation they experienced in their coffins ; 19 to their interment having been delayed by fortuitous circumstances ; and six to their interment having been delayed in consequence of doubts having been entertained of their death.

Dr. Struve, in an essay on the art of recovering suspended animation, makes the following remarks :—“ The *Earth-bath* is not only useful for persons struck by lightning, but may also be benefi-

* London Medical Gazette.

cially applied in other cases of apparent death. Its efficacy is partly owing to the proportionate warmth, and partly to the invigorating vapors of the earth. It is a common practice among miners, when one of their companions is suffocated by mephitic air, and drops down lifeless, to bury him in the ground to his neck, and at the same time to sprinkle his face with cold water. If in very frosty weather it were practicable to dig the ground, the *earth-bath* would afford an excellent and novel process for the resuscitation of those apparently destroyed by cold. The following anecdote on this subject deserves attention.

“A beggar arrived very late at night, and almost frozen to death, at a German village ; and observing the school-house open, he resolved to sleep there. The next morning, the school-boys found the poor man sitting motionless in the room, and hastened, affrighted, to inform the schoolmaster of what they had seen. The villagers, supposing the beggar to be dead, interred him in the evening. During the night, the watchman heard a knocking in the grave, accompanied by lamentations ; he gave information to the bailiff of the village, who declined to listen to his tale. Soon afterwards the watchman returned to the grave, and again heard a hollow noise, interrupted by sighs. He once more hastened to the magistrate, earnestly soliciting him to cause the grave to be opened ; but

the latter, being irresolute, delayed this measure till the next morning; when he applied to the sheriff, who lived at a distance from the village, in order to obtain the necessary directions. He was, however, obliged to wait some time before an interview took place. The more judicious sheriff severely censured the magistrate for not having opened the grave on the information of the watchman, and desired him to return and cause it to be opened without delay. On his arrival the grave was immediately opened; but, just Heaven! what a sight! the poor wretched man, after having recovered life in the grave, had expired for want of air. In his anguish and desperation, he had torn the flesh from his arms. All the spectators were struck with horror at this dreadful scene."

Should the views of our German author relative to the influence of the earth-bath be correct, what a warning have we in the instance before us, to be doubly cautious in submitting the body to a process that may again reanimate its slumbering energies, only to consign it to the unimaginable terrors of a living tomb!

When, in our concluding remarks, we come to consider memory in its connexion with, and its dependence upon external sensation, the psychological application of trance will more fully appear.

CHAPTER VII.

CATALEPSY.

It is not our purpose to give a detailed account of catalepsy: this would be foreign to the objects of this work; but we shall treat it only as a collateral branch of our subject. The distinction, however, between catalepsy and other affections likely to be mistaken for it, will be examined and pointed out.

The *physical* diagnostic of catalepsy is a wax-like flexibility of the voluntary system, so that in whatever position the body or limbs may be placed, if within the base of sustentation, it will be retained while the paroxysm continues. The *psychological* condition is marked by an entire disassociation of the mind with external things. The result of such a combination is perfect rest of the locomotive apparatus, absence of external sensation, loss of consciousness of surrounding objects, and obliteration of memory for the time being.

There is a large class of nervous affections which in some particulars resemble catalepsy, and are so often confounded with it, that its pathognomonic character is not unfrequently lost sight of. Trance,

incubus, epilepsy, hysteria, revery, and several other anomalous affections, are frequently regarded as cases of this disease.

For instance, "A lady, the mother of an adult family, and inclined to obesity, had acquired the reprehensible custom of exclaiming upon the most trifling occasion, *oh Christ!*—and it happened one day, sitting alone at work as was her custom, she dropped her thimble, and in stooping to pick it up overbalanced herself, and nearly fell on her face, when she uttered the words *oh Christ!* On regaining her seat, she felt that the blood had flown to her head, and put up her hands to her eyes, and closed them to relieve herself. On opening them, she saw, immediately sitting before her, a figure like a human creature; but, instead of hair growing from each side of the head, long fleshy strings knotted here and there like stems of parsley, depended to its shoulders and chest; and as it leaned the head upon the hands, the elbows of which rested on its knees, it rocked itself backwards and forwards, exclaiming every time it stooped, *oh Christ!* She became instantly transfixed, and remained in that position probably half an hour, when the servant entered and found her limbs rigid, and her eyes wide open, and staring as if at some object before her. Her screams procured assistance; and active remedies being employed, she recovered her senses, and related what we have just mentioned. For

a long time afterwards, we believe for five or six years, at the same hour every day, if sitting down, she was seized in the same manner, and saw the same horrible apparition before her."

The case of this "lady," given in the books as catalepsy, we conceive to be an instance of hallucination, induced by cerebral congestion, somewhat resembling the character of that with which the poet Tasso was afflicted, but associated with involuntary muscular contractions. It was not catalepsy, because consciousness, sensation, and memory were present, and the muscular system was rigid.

"Dr. Gooch met with a case, supervening on puerperal melancholia, in a female debilitated by repeated miscarriages. The trunk, as she lay in bed, was raised to an obtuse angle, and retained this painful posture; the limbs remained in any position in which they were placed; and if set on her feet, the slightest push threw her off her balance, nor did she make any effort to regain it. The eyes were open, and the pupil, though dilated, contracted on the application of a strong light. She had three of these attacks, each of which lasted several hours, and recurred at intervals of one or two days." These symptoms correspond with the essential character of catalepsy, and it was undoubtedly a genuine instance of the disease.

A case of catalepsy, induced by Animal Magnetism,

an account of which we published in the "American Journal of the Medical Sciences," in 1842, we here transcribe.

The subject was a female, sixteen years of age, sanguineo-nervous temperament, in good health, who had passed the change of puberty without derangement of constitution, and is competent to perform the amount of labor that falls to the lot of persons in an humble station in society.

Lest the imputation of sustaining the many wild vagaries of Animal Magnetism should be attributed to this article, it will be necessary to remark, that such is not its object. The permanent existence of that subject of research must stand or fall on its own merits; but the admission of individual facts, established by concurrence of a plurality of the senses, and which are necessary to elucidate important phenomena, is the province of true philosophy.

Its influence in this instance was to produce the *diagnostic* symptoms of *complete* catalepsy. The patient, after having submitted to the manipulations of the magnetizer for the space of fifteen minutes, was in a state of sleep so deep, that all the stimuli that could with safety be applied to the senses, did not disturb the profundity of her slumbers. The needle was applied to the dermoid texture, torpedoes were repeatedly discharged within a few feet of the organs of audition—

lights were presented to the apparatus of vision—the vapor of ammonia inhaled in respiration, and general concussion applied to her whole system, without eliciting any acknowledgment. During this condition, her extremities could be placed in any position, which their waxlike flexibility would maintain; and an erect posture was secure without extraneous support, when the feet were so placed as to bring the centre of gravity within the base of sustentation. The respiration resembled that of ordinary sleep, and the arterial action was a little excited. The eyelids, when separated, exhibited the globus oculi under the control of the inferior oblique muscle; and upon removing the fingers, the lids would immediately close. The lower jaw retained the position in which it was placed by force.

These unequivocal cataleptic symptoms were succeeded by a development of the integrity of the mental organs, while separated from surrounding objects by the obliteration (for the time being) of the external senses. During this state, questions were submitted to her by the manipulist, and were replied to, some correctly, but the greater portion otherwise, although all the answers had reference to the subject of inquiry, showing conclusively, that several of the fundamental elements of the mind were not influenced by the disease.

During one experiment, it was observed, after she

had been under this influence for an hour, that the wax-like flexibility of her arms was subsiding. Thom relates an instance of the removal of a paroxysm of catalepsy through the influence of music. An experiment was now resorted to by means of a large accordion played near the back of her head, but without apparent effect. After she was liberated from this condition, she at first retained no recollection of any circumstance whatever ; but on having her mind called to the subject of music, she remembered to have heard it, seemingly at a great distance. How this sound was communicated to the sensorium is an enigma, unless the peculiar condition in which she was had very much subsided, or that there is an influence in the "concord of sweet sounds" over this disease.

These experiments were instituted for the purpose of obtaining facts to establish the laws governing the phenomena of Animal Magnetism, and have been continued in this particular case, for the elucidation of the disease developed by its influence.

Catalepsy does not extend its morbid influence to that portion of the brain that provides nervous excitement to the system of organic life ; if it did, the functions of respiration and circulation would cease during the paroxysm, and life be extinguished. Neither does its power obliterate for the time the action of the

intellectual organs ; for how could these be manifested when all the symptoms are upon the patient in their greatest perfection ? The power of articulation shows that the organs through whose agency the mental operations are conveyed by the faculty of speech are still supplied with nervous influence, and are under the control of the will, consequently not influenced by the disease ; and the *source* of that nervous power which is bestowed on the muscles during locomotion, and which is subject to the will, is also independent of its morbid action.

The exciting cause of cataleptic symptoms may arise from mental or physical, social or general irritations. Catalepsy is only the *symptom* of a disease. The *cause* of the repeated attacks of this affection undermines the health, and ultimately destroys life. The disease being a secondary symptom of an irritation which is acting with continued injury to the system, only showing itself when it becomes of sufficient intensity to develop this peculiar condition, is uninterruptedly bearing upon the health of the patient. In the case under consideration, it has been repeatedly induced without the least injury. The reason is obvious ;—the exciting cause being entirely removed, the system is left in as perfect a state of health as before the experiment.

The proximate cause of the pathognomonic muscular phenomena arises in an equal distribution of

nervous power conferred on the voluntary muscles of animal life. The nervous influence necessary to the rectitude of these organs is regularly transmitted ; but as there is a disconnexion of the intellectual faculties and physical condition, volition is not directed to them, consequently they do not perform those offices for which they were intended ; they are equipoised by this nervous stimulus. When external force is applied, as in bending the arm, the balance of power is merely overcome ; and upon withdrawing the force, the power is again equally balanced, presenting in the limb the diagnostic symptom of the disease. When the will acts upon these muscles in their normal condition, it changes or overcomes this equal distribution of the nervous influence, and they perform those movements directed by the intellect. During sleep, the voluntary muscular system is in the relaxed state to which it was resigned when sleep was taking possession of the system ; but the phenomenon in question is unpremeditated, and seizes suddenly upon those organs subject to its influence, leaving all other parts in the accomplishment of their natural functions.

The pathology consists in the entire separation of the intellectual faculties from the requirements of physical existence. The functions of the external senses by which we are connected with surrounding objects, and through whose agency the mind recog-

nises external relations, are by the action of the disease closed to all impressions. The intellectual power of volition, which excites the muscles to act in obedience to the dictates of the mind, is stationary ; because the mind is disconnected with the external world. This condition annuls the power of making muscular efforts, because it has annulled the desire of willing, for as the mind perceives not the situation of the body, it does not comprehend its wants, and therefore cannot will the action of the organs of external life.

Catalepsy is confined to the voluntary motor and sensitive divisions of the nervous system. The intellectual operations are indirectly influenced by the closing of the channels of sensation.

If the mind is not dormant when the body is under the influence of this disease, why does it not manifest itself through the vocal organs, as when replying to the interrogations of the magnetizer ? Simply because the disease has shut it in from the perception of external influences ; and however perfect it may be in itself, the external world can have no bearing upon it ; its desire of external communication through the organs of speech is not excited.

It may be asked, through what channel the magnetizer communicates his ideas to the magnetized, if the functions of the external senses are in abeyance ? The reply would be speculative ; but that they are not

transmitted in the usual modes in all cases, is shown from the fact, that should another than the magnetizer propound the question, the sound would fall on the ear without producing an impression ; and the accurate perception in the sensorium of the quality of many substances, when placed in the hand, that during a natural state could only be determined by the eye, is opposed to the inference that the communication is made through the ordinary means.

Animal magnetism produces in some constitutions merely a condition of sound sleep, while in others it superadds convulsions ; in this case it was the exciting cause of catalepsy, and in every instance, its morbid force is exerted on some portion of the nervous system. Irritation in the alimentary canal will sometimes produce cataleptic symptoms ; so also will the more direct nervous irritation of animal magnetism : but although this peculiar phenomenon may depend upon either of these causes, it is no less genuine in its character, and no less a proper subject of pathologic investigation.

CONCLUSION.

To establish with greater certainty the doctrines, that the mind is absolutely sleepless ; and that we are dependent on external sensation for a remembrance of what passes in the mind in somnolency ; it becomes necessary to take a cursory survey of our preceding observations. In this, however, we shall not recapitulate in detail the facts on which those doctrines are founded, but only consider their general bearing, and by the introduction of other circumstances corroborative, endeavor to confirm our propositions.

Sleep is a phenomenon of that part of our existence by which we are connected with the external world, and during sleep the mental operations proceed, though modified by its influence. During this state, the mind is restricted in its operations to the stimulus afforded by the activity of the innate powers of the cerebral organization, and as one consequence of this activity, the memory of past events is brought to view. We arrive at this conclusion from those states of mind in which we perceive that by-gone circumstances are recalled and associated in the mental process. And

although, in these operations, the mind is brought to a remembrance of what has passed, the memory is not impressed with the thoughts which occupy it while external sensations do not contribute their stimuli to its operations. To this conclusion we come, from those states of being in which we know that the mind was active while the senses were dormant, and there was no remembrance on awaking of what then transpired. From the facts that the mind is active without the stimulus of external sensation, but that without this stimulus there is no memory, and that the perception can be as readily stimulated by the internal as external sensations, we conclude that it is exclusively through the activity of the organs of perception that the memorial faculty is manifested, and that these organs must be approached through the special senses to develop this mental power.

If ceaseless activity of the mental organ exists not only during sleep, but in every condition short of dissolution, why should not one train of thought be remembered equally well with another? The reason is, that perfect sleep disconnects the external world and mind, and any mental operation not based in concurrent outward relation, cannot be recollected.

Memory, we repeat, is a mental element manifested through the activity of the organs of perception. It is requisite, however, that these organs receive their

stimulus from certain sources, otherwise the memorial faculty will not be impressed. When they receive their stimulus from external objects, this faculty is developed. When they receive their stimulus from the propensities or sentiments, the resulting mental operations are not remembered. From this circumstance, we apprehend, phrenology has concluded that the animal organs are not possessed of memory ; but whether they are or not, they do not (as will afterwards appear) stamp the result of their stimulus indelibly upon the mind.

Universal experience teaches that what we see or hear, we remember better than what we imagine or read about, because memory is much clearer and more durable when its objects are perceived through the external senses, than when it is merely a deduction of the mind, or in other words, when it is only an intellectual impression.

The perceptive faculty has three sources of stimulus ; viz. through the media of internal and external sensations, and the powers of reflection. The thoughts which follow the impressions of the first, when unconnected with the second, are not remembered ; and those flowing from the last, under similar circumstances, are imperfectly retained ; but the perception of impressions received through the organs of external sense, developes the memorial faculty in its fullest power.

Through perverted or imperfect sensations, perception is so modified, that dreaming and insanity singularly harmonize. The perceptions being in consonance with the state of the impressions transmitted, the perception of actual existences is imperfect, and memory fails to recall and associate the past with the present in accordance with reality :—hence some of the incongruous results of the mental operation during these states.

In old age the organs of sense lose their nice property of receiving impressions perfectly ; consequently the perceptions are indistinct and the memory of recent occurrences is defective, but the remembrance of circumstances which occurred in times long past, when the senses were intact, is comparatively fresh in the mind. The mental operations that depended upon the internal impressions of those times are forgotten, and only those in which the external senses largely contributed, are retained. If memory, as advocated by Dr. Combe, be a mode of activity of the knowing or perceptive organs, and if this activity can be stimulated by the will, then we may possibly account for this peculiar feature of advanced age. Early impressions having been made upon organs in good condition to receive and transmit them accurately to the perceptive faculties, a corresponding effect was there produced. Now volition is little impaired by age, and through this

power the mind can at will recall mental perceptions; but the perception of impressions made through impaired organs of communication, is so feeble from the imperfection of the instruments employed, that owing to this feeble perception there is but little for the will to act upon, and consequently, early perceptions are readily recalled, while those of recent occurrence are indistinctly remembered.

A visitor's remarks upon the venerable statesman, John Q. Adams, then 81 years of age, appear appropriate to our subject.

"I found him," he says, "much reduced in strength and activity, from what he was a year ago, before the alarming illness he had last Fall. He was also much overcome by the heat, which was quite severe at the time. But his general health is comfortable, his spirits cheerful, and his intellectual powers bright and vigorous. He has a great deal of company, being an object of such wide-spread interest both to our own countrymen and to foreigners. His memory of historical events, which has always been so remarkable a feature of his mind, is apparently as minute and exact as it ever was. Nor is his familiarity with passing events apparently diminished, though he himself observes that *there are now but few classes of occurrences that attract his attention sufficiently to fasten themselves in his memory.*"

Another reason why early impressions are better remembered, is, because the mind instinctively reverts from scenes of age to youth, when the whole constitution was better fitted for the enjoyment of existence. In reflecting upon those periods, the individual experiences more happiness than by turning the mind upon scenes to which the hand of time has set the price of experience.

“Even so in sweet treachery, dealeth the aged with himself,

“He gazeth on the green hill-tops, while the marshes beneath are hidden,

“And the partial telescope of memory pierceth the blank between,

“To look with lingering love at the fair star of childhood.”

A short time since, when in attendance upon my aged mother, whose mental state was, to all appearance, the counterpart of a shattered and nearly worn-out physical constitution,—both the mere shadow of a past reality—we endeavored during a paroxysm of apathy, to arouse her attention or memory by directing her mind upon various topics, but without success, when I inquired whether she remembered the time when I was weaned, a period of over thirty years since. Her haggard and apathetic expression at once changed, as though a fresh gleam of light and joy had broken in

upon her soul. Her ready reply was, "I well remember that time," and for the instant, intelligence again beamed in her countenance, though, through wasted physical powers, the external manifestation was quickly obliterated ; whether it as suddenly vanished from her mind is even beyond conjecture.

Dr. Thomas Brown says, that "memory, judgment, and imagination, may be put to sleep with opium." Now, in our opinion, this doctrine is erroneous, and the error arises from the fact, that on awaking from the narcotic torpor, there is no remembrance of thought during its continuance. The sleep induced by opium, although to all appearance profound, is nevertheless followed by great mental and bodily fatigue. If the dose is insufficient to cause an obliteration of external sensation, the mental activity is not only augmented, but is remembered, and much weariness is experienced on recovery ; and when the quantity is adequate to produce sound sleep, the mind runs on at a still more rapid rate ; for upon resuscitation, the exhaustion is great in proportion to the degree of sleep induced.

In sound sleep, consciousness and memory are suspended, so far as regards external relation ; but the weariness and exhaustion which follow the torpor induced by opium, are irrefutable evidence that Dr. Brown's conclusion is erroneous, for without undue cerebral excitement, the mind and body would have

emerged from its influence refreshed, instead of being enfeebled.

During sleep, memory may be inactive from absence of external stimuli, and the judgment deranged through the operation of sensations unconnected with outward relations ; but the imagination is often stimulated into its wildest fancies by the former, while the restraining influence of the latter is withheld. All the mental faculties are modified in their activity by sleep, because by it a different relation is established. When the mind is sound and the body awake, impressions from without have the controlling influence ; but when asleep, the intellectual operations are stimulated by internal influences, or impressions from the affections or feelings—consequently, a different result must be expected.

It appears at least probable, that intellectual operations induced by internal causes, are not, under any circumstances, the objects of memory to so great a degree as those produced by external objects. Certain it is that during that stage of sleep in which the external senses are in abeyance, we know that, from internal causes, there is excessive action in the mental organ, without leaving any impression upon the memory. For example, we refer to voluptuous orgasms in sleep, in which, should the excitement be so exalted as to arouse any of the senses, memory retains the circum-

stance as a dream ; but when the exaltation does not reach that pitch, the mind has treasured nothing of the occurrence. Yet in such instances, the evacuation is incontestable evidence that mental action did exist, and that the mind was not asleep. Vigorous activity of a propensity or sentiment will stimulate the intellectual faculties to originate mental pictures to gratify the original desire ; and in these cases the mental operations are not only diversified, but intense—involving the greater part of the mental powers.

In the *Medical Repository* for January, 1816, there is a remarkable case of double consciousness, and one of the very few instances recorded as such, that bear its diagnostics. To some it may possibly present an objection to our views, and therefore we copy it.

“When I was employed,” says Dr. Mitchell, “early in December, 1815, with several other gentlemen, in doing the duty of a visitor to the United States Military Academy at West Point, a very extraordinary case of double consciousness in a woman, was related to me by one of the professors. Major Elicott, who so worthily occupies the mathematical chair in that seminary, vouched for the correctness of the following narrative, the subject of which is related to him by blood, and an inhabitant of one of the western counties of Pennsylvania :—Miss N—— possessed, naturally, a very good constitution, and arrived at adult age, with-

out having it impaired by disease. She possessed an excellent capacity, and enjoyed fair opportunities to acquire knowledge. Besides the domestic arts and social attainments, she had improved her mind by reading and conversation, and was well versed in penmanship. Her memory was capacious, and stored with a copious stock of ideas. Unexpectedly, and without any forewarning, she fell into a profound sleep, which continued several hours beyond the ordinary term. On waking she was discovered to have lost every trace of acquired knowledge. Her memory was a *tabula rasa*,—all vestiges, both of words and things, were obliterated and gone. It was found necessary for her to learn everything again. She even acquired, by new efforts, the art of spelling, reading, writing, and calculating, and gradually became acquainted with the persons and objects around, like a being for the first time brought into the world. In these exercises she made considerable proficiency. But, after a few months, another fit of somnolency invaded her. On rousing from it, she found herself restored to the state she was in before the first paroxysm; but was wholly ignorant of every event and occurrence that had befallen her afterwards. The former condition of her existence she now calls the old state, and the latter the new state; and she is as unconscious of her double character, as two distinct

persons are of their respective natures. For example, in her old state, she possesses all her original knowledge ; in her new state, only what she has acquired since. If a gentleman or lady be introduced to her in the old state, and *vice versâ* (and so of all other matters), to know them satisfactorily, she must learn them in both states. In the old state, she possesses fine powers of penmanship, while in the new, she writes a poor, awkward hand, not having had time or means of becoming expert. During four years and upwards, she has undergone periodical transitions from one of these states to the other. The alternations are always consequent upon a long and sound sleep. Both the lady and her family are now capable of conducting the affair without embarrassment. By simply knowing whether she is in the old or new state, they regulate the intercourse, and govern themselves accordingly."

In this case of double consciousness, the mind was impressed in both states through external sensation, and from this circumstance, she should have retained that which occurred in either state at any time ; but although this was not the fact, still whatever was impressed during either the old or new state, was readily recollected when the corresponding state returned, and there being no connexion between the states, there is nothing to invalidate our theory, because this is an instance in which the change extended indiscrimi-

nately to all the mental powers. Memory itself was involved in the derangement, and therefore we find a perfect duality of identity.

Eliza Bullard—our patient—aged fifteen years, by birth a French Canadian, of a bilio-nervous temperament, was suddenly seized with convulsions, which continued at intervals for about six weeks. The paroxysms occurred many times a day, each lasting from a few minutes to two or three hours. The muscular contractions were occasionally so violent, that the back of the head and soles of the feet were brought nearly in juxtaposition.

For about two weeks of this period, when her voluntary muscular system was in the most rigid condition, she would sing one or two hymns so loud and clear, that they could be distinctly heard at ten or twelve rods from her dwelling. After singing, she usually commenced praying in an under tone. The words could be heard by attentive listening. Religious thoughts and exercises occupied her mind during the paroxysm. Several times we tried to resist the lower jaw in its movements, when articulating the words of the hymn, but it felt like grasping a piece of machinery, driven by a resistless motive power: the motion could not be impeded. After the paroxysm had subsided, she remembered nothing that had passed, and was much affected when informed of her musical perform-

ance. She could always be relieved of the spasm in about three fourths of an hour, by placing far back on her tongue two drops of Croton Oil. This case we relate, merely as an additional illustration of mental activity, independent of external sensation and without memory.

The senses may be intact, the motor apparatus subject to the will, and yet the mind perceive not the movements of the body, although the inception of the act arose in the brain. When one of a series of movements is started, the whole catenation may be completed by the mere influence of reflex action, without a mental perception. "In 1834, Maria Pau was admitted into the hospital at Bordeaux, her left hand and arm covered with deep and bleeding gashes, its tendons projecting, and the bones broken. She had, in her sleep, gone into a loft to cut wood with a hedging bill; thinking she was cutting the wood, she had hacked her forearm and hand until she fainted away, and fell bathed in her blood. *She had felt no pain*, but merely had a sensation as if the parts were pricked with pins." The case of the individual who leaped from the hotel-window, previously related, is of the same character. In the leap his ankle joint was severely sprained, but it made no impression upon his mind. A series of actions somewhat resembling these, may be observed in certain animals of the lower

orders. Neither brain nor nerve can be found in the polype, but it moves by irritability, and exists without sensation or consciousness.

Now if these views are philosophic, a part of the external senses may be impressible, and yet convey no impression to the mind, but still guide the locomotive operations. Under such circumstances, the mind is in the same condition, so far as the influence of nerves is concerned, as though they were entirely inactive, and therefore does not disturb the theory, that memory of what occurs during sleep depends upon perception of external relation through the sensitive organs. For if the locomotive power resides in the spinal cord, and if locomotion occurs during sleep, and if the mind does not perceive through the nerves of sense the movements of the body, there justly can be no perception, although there may be sensation, and in this case, we apprehend, there is no memory of occurrences connected with our existence: and as before stated, 'there are many cases of somnambulism in which the mind seems not to participate.' The somnambulist receives the first impulse to action from the will; after which, locomotion is continued through the force of reflex and associate or consensual action.

It would further appear that memory is dependent upon the organs of external sensation, from the fact that it is not only observed in ordinary sleep, the

mesmeric state, somnambulism, catalepsy, in some instances of insanity, but in trance also. When treating of this last condition, two cases were related which are here applicable. The case of Mrs. Godfrey, without sensation, and no remembrance of the circumstances; and the case of the young woman, taken from the "Psychological Magazine," who felt her attendants pull on the dead clothes, and heard them sing the funeral hymn, and on recovery had a perfect remembrance of all that occurred during that dreadful period.

It may be remarked, that the reason why in the former instance there was no memory, was because the patient was unconscious. Our view is, that the mind is never asleep—never in abeyance—never unconscious. When the external channels of information are closed, it receives no knowledge from without, and is then only conscious of influences from within. The affections or feelings are now its stimulus of action, and mental operations having their excitement in the activity of these organs, which, with Combe, we believe not to possess memory, the mental operations are not retained. Even in the apoplectic coma, which may be so profound that the patients cannot by any means be aroused from their lethargy, it is no uncommon occurrence to hear them muttering about circumstances connected with their business-affairs, and on recovery, retain no remembrance of having even dreamed during

the paroxysm ; but they were conscious of internal influences, otherwise there would have been no manifestation of thought.

Memory, therefore, we conceive to be connected with the activity of the organs of perception, and when they are stimulated by external impressions, this faculty is fully developed. When the same organs are excited, either by the influence of the propensities or intellectual operations, as in sound sleep, and in some cases of trance, the memorial power is in abeyance ; but when they are stimulated by that nervous mode of action inducing phantasm, their relation is precisely the same as if really impressed by physical objects.

We are aware that some circumstances seem to present objections to these views. But when we contemplate the proportional decline of memory and sensation, as age advances, and also take into consideration the fact that judgment and volition are unimpaired by the same cause, and that we can at will recall the memory of long past events as perfectly and with as much facility, as at any former period ; and when we perceive the same phenomena exhibited in the withholding the transmission of surrounding influences in sleep with its analogous states ; we can scarcely come to any other conclusion, than that external sensation and memory are most intimately connected, and that

the mind is dependent in proportion to the integrity of the organs of objective communication, for its remembrance of what occurs during sleep.

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